

STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:)	
)	
Informational Proceeding to Develop)	
Recommendations for Amending the)	
Commission's Responsibilities and)	Docket 97-DC&CR-1
and Activities Related to Data)	
Collection, Analysis and Dissemination.)	
_____)	
)	
Proposed Amendments to the)	
Commission's Regulations Pertaining)	
to Data Collection and Disclosure of)	
the Commission's Records.)	
_____)	

AD HOC INFORMATIONAL COMMITTEE WORKSHOP
on REGIONAL TRACKING of
ELECTRICITY GENERATION INFORMATION

Friday, September 18, 1998

10:00 a.m.

Held at the:

California Energy Commission
1516 Ninth Street, Hearing Room A
Sacramento, California 95814
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(With participants via telephone and Internet)

Reported by: George Palmer

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I N D E X

<u>Agenda Item</u>	<u>Page</u>
Welcome and introduction by Commissioner Moore	4
Defining the Region	4
Summary of the August 1998 Denver Meeting by Commissioner Gillis	7
Presentation on California's Efforts by Commission Staff	13
How SB 1305 Works	15
How to Report	21
A Tagging Approach for California	30
Regional Tagging Approaches	30
Certificate-Based Tagging Systems	30
Data Sources	70
Standardized Formats	91

Roles: Public Utility Commissions, State Energy Offices, System Operators	94
The Need for Future Legislation	100
Adjournment	107
Reporter's Certificate	108

Ad Hoc Information Committee Workshop, September 18, 1998

Friday, September 18, 1998 10:17 o'clock a.m.

P R O C E E D I N G S

PRESIDING COMMISSIONER MOORE: Good morning and welcome to the Informational Workshop on a Regional Tracking of the Electricity Generation Information.

I'm Michael Moore, I'm a Commissioner here at the California Energy Commission in Sacramento, California. And I'm joined on the dais by Commissioner Bill Gillis, from Washington State, from the Public Utilities Commission there.

And we will be conducting this informational workshop today, a precedent setting event, at least in the annals of the California Energy Commission, since of we'll be broadcasting live via the Internet.

And we welcome those who are participating on the Internet to this site and to the proceedings that we will be covering today.

We know that we are joined at this point by several individuals who I would like to acknowledge, who are on the link right now, and we expect to be interacting with, Sheryl Carter, from National Resources Defense Council, Robin Larson, from the Independent Systems Operator here in Sacramento, Barney Olson, from the Washington Department of Commerce Trade and Economic Development, and Dr. Ian Hodge, at the University of Cambridge in England.

So we welcome all those who are online right now and

Ad Hoc Information Committee Workshop, September 18, 1998

look forward to your participation in this somewhat novel approach trying to communicate and to our colleagues who are at the Energy Conference and Houston, as we speak.

With that let me open these proceedings by saying that this workshop grew out of a series of discussions that have been initiated by Commissioner Gillis in the past and which really are pretty far reaching into their intent trying to imagine whether or not a tradeable tagging system that would be available on a regionwide basis would work and would be accepted by the Western states and by our Canadian neighbors in Alberta and British Columbia. We're in the process of exploring the concept.

And in introducing that, let me just say that one of the things that we think about and imagine that we'll have to eventually solve this, how to define the region that we operate within.

Regions are elusive commodities. They're like trying to define in the sense of community where you have to deal with intangibles, like the sense of design, or the sense of communication.

We're aware of that and we're aware that we can't solve it today but that we can point to some background work that has been done where the Western States Coordinating Council provide us with a convenient model to imagine a sense of region that involves the 11 Western States and the two Canadian Provinces

Ad Hoc Information Committee Workshop, September 18, 1998

that I just mentioned, British Columbia and Alberta.

And that within that region we have a common interest. And that common interest is to understand the generation of electricity at its source and the flow of electricity as it proceeds throughout the region so that individual states can understand the import implications of what they are buying as well as the severable characteristic of energy which is where it was produced.

That severable characteristics can be described and a lot of different ways, including its emissions characteristics, or simply its source characteristics, for instance the difference between solar, or gas, or coal generation.

So with that I will simply say that for right now we're going to proceed on the simplest possible basis and imagine that right now the only thing we have is an open communication link between the Western States and their representatives, and our Canadian brethren.

And that with that we hope to build on a series of future meetings and future communication to establish, perhaps, a tradeable tagging system. But if not that, at the very least, increased coordination between the states and the provinces.

So the sense of region will underlie a lot of our decision making, and hopefully some of the writing that we do in the future where we try to get more explicit about that.

Having said that I'm going to turn to my colleague,

Ad Hoc Information Committee Workshop, September 18, 1998

Commissioner Gillis, and ask him to describe what we did in August in Denver at a meeting of Commissioners of the Western States and describe a little bit of the results of that meeting that brought us here today.

Commissioner Gillis.

MR. GILLIS: Good morning. And thank you Commissioner Moore for inviting me here today, and also for your leadership in helping us think about this as a region. Because I think that's just the critical parts that's going to make this work is to be able to function well as a region on the issue of tracking.

Commissioner Moore asked me to briefly describe where the origins of this project came from and the consensus that appears to be developing, at least out of the meeting that we held in Denver last August.

Just a little brief background.

The Western Region Public Utility Commissioners, and energy offices, and the California Energy Commission, and a pretty broad group of stakeholders have, for about six months now, been exploring this issue how do we develop a consistent regional tracking mechanism that could be coordinated and adopted across the region on a fairly comprehensive basis.

And we've been approaching that with a consensus stakeholder process to the extent possible.

It became a real clear to us as we went along that

Ad Hoc Information Committee Workshop, September 18, 1998

there is a lot of self-interest from a variety of stakeholders, from the industry's perspective, that self-interest is really developing a marketplace for differentiated products, particularly the renewable products.

If we don't have a mechanism that provides for consumer confidence in the product it's going to be hard to develop those markets.

From the standpoint of the environmental interests it's an opportunity to develop more environmentally friendly products.

For consumers it's an opportunity to make choices.

From States, like California, they're moving ahead with a choice-environment the regional interest seems to be to help in making the tracking more effective in providing for consumer confidence. And the regional cooperation is something that helps with that.

And even from a state like mine, in Washington, where we're moving ahead quite slowly with any movement towards competition we have a lot of interest in this topic because, frankly, for one thing, to the extent that our environmental values are sold it to other states, like California, it's important to us to be able to capture those values.

And also we know that over time it's likely our state and most states will evolve with more choice for consumers. And it's important that we all coordinate this early on. So there's

Ad Hoc Information Committee Workshop, September 18, 1998

a lot of self interest, I think, that's helped build some consensus.

What we found is, in thinking about the Western Region that's unique, is there's two real key things that will make us successful.

One is to have a flexible mechanism because states are moving at different paces. At this time it has to be able to accommodate a lot of different scenarios.

Then states have different ideas of what we want to disclose. In California fuel mix is the basis. In other states there's some interest in emissions and perhaps other attributes. And the mechanism needs to be flexible enough to accommodate those.

And the other key attribute that came out is what we need to do for having a consensus on this is to have a an administratively simple process.

In the Western grid we have 30-odd control areas, which complicates the matter. We have issues of technical and just financial feasibility of doing this on a more comprehensive basis.

And so as we talked about this the claims-base with a calculated residual mix became something that seemed the most feasible to work with and that's been kind of the basis of a lot of our discussions.

We did evaluate, and brought to Denver, two different

Ad Hoc Information Committee Workshop, September 18, 1998

models. One is a settlement-based approach that has verifiable contracts and at the edge also even identifiable transmission paths.

And then what is referred to as the certificate-based approach, where with the former approach the energy and the attributes are sold as one product. With certificate-based approach there's the opportunity to sell the energy and the attribute as a separate commodity.

But what occurred in Denver that got us all excited, and really I think is the reason that Commissioner Moore had it suggested this forum is, that as we've talked about it, it really seemed like what's going on in California forms the basis of what we think is the region can form some consensus. It builds the best of both of these two models with a potential tweak of adding the notion of certificates to the California model.

The proposal that came out of Denver had several basic elements to it. The core of it is to establish a regional information clearing house somewhere within the region. One of the primary responsibilities initially of that clearing house would be to calculate the residual regional power mix for the Western Region on an on-going basis.

And as our discussions in Denver there seemed to be a fair amount of consensus that that might very well be a private sector function with a private vendor assembly and the necessary

Ad Hoc Information Committee Workshop, September 18, 1998

data. There's a number of public data sources from EPA, EIA, that may form a basis for that.

But to improve that further as we go along, states that collect data on retail claims, would send that data to the same regional clearing house.

So we begin to refine and improve that data for accuracy with the residual calculation. And equally important we would have an opportunity to prevent double counting or double selling of the same attributes across the region which isn't one of the reasons why we need the regional coordination is that for each of our states, to the extent that we want to have disclosure, that for us to be sure that that's not being doubled sold it's important to have some kind of mechanism in place that we talk to each other across state lines, or be able to count across state lines.

Potentially another role of this clearing house would be to issue certificates to generators. And there the consensus was that those may emerge as tradeable certificates over time just as a natural evolution of more states of being involved with this.

But we saw, when we discuss this in Denver, we saw this as an opportunity perhaps to reduce administrative costs of the California system. That there isn't that much difference between the way we were talking about certificates as a group and what you're doing in California.

Ad Hoc Information Committee Workshop, September 18, 1998

But the certificates provide maybe an administrative approach in conjunction with the regional clearing house that would help reduce your administrative costs and provide us a means to communicate.

And another real key element of our consensus was that the tracking approach to build off the California's existing approach.

It seems like that in California this state has taken the lead, is well on its way to establishing a good it tracking approach and a solid disclosure approach.

And we as a region -- and when I say "we," there was representatives from nearly every state. I think Nevada might have been the missing state that was at the Denver meeting. But nearly every state was there. And everybody agreed that this would be a good way to do, to build off of California.

We did not have representatives from the Western Canadian Provinces at the meeting. There was discussion that we may want to involve them as we go along.

But there are a lot of unresolved details; How much would it cost? Where with the clearing house be located? How would we allocate the costs? What are the oversight required? And who would be responsible for that? Is a voluntary program enough or will we need a mechanism to compel participation? Does it go far enough for states that aren't at the moment going into a choice environment?

Ad Hoc Information Committee Workshop, September 18, 1998

So there's a variety of questions that we need to resolve. But we agreed in Denver that this would be a really good forum to begin to work with those questions in the context of what you're doing and California.

So again I've very much appreciate Commissioner Moore's leadership and organizing this and look forward to the day.

PRESIDING COMMISSIONER MOORE: Thank you, Commissioner Gillis.

I would point out that a lot of this grew out of efforts within this Commission to develop a tracking system to verify environmental claims under the SB 1305 legislative proposal that was passed by our California Legislature last year.

And in order to start from a common base what I'm going to ask is that we have a Staff member who will give us a synopsis of that program, how it's working, and then we'll talk about what is the natural growth out of that into a bigger system. What have we learned from SB 1305 and the reporting system that we've set up to deal with that?

And we have, at least for discussion, an idea of a tagging program that could originate here that may provide an opportunity for other states to sign on to.

I will say at the onset I'm very sensitive to the point that Bill just made which is that every other state in the Western Region is in various stages of either deregulating,

Ad Hoc Information Committee Workshop, September 18, 1998

reregulating, or considering the same. So we're all at different points in the evolution of the process.

Whatever system that we advocate in the end, if any, needs to accommodate every actor in whatever phase they're in and, in a sense, needs to be the simplest possible system so that people can sign on to it later.

And as I have indicated in Denver and in the previous meeting we are ready to modify our own approach if it means that a greater coordinated regional system would evolve from that.

So right now were mandated to run the SB 1305 program within the state. But in the sense that we can have a greater good come out of it we see the SB 1305 profile and function that we've set up as being malleable. We can change it later on to accommodate regional needs. And we believe that the Legislature will be wholeheartedly in support of that here in California.

With that, let me introduce one of our Staff members, who works on this project, Robert Grow.

And Bob, I'm going to ask you to give your presentation. And then where there are graphics that come up on the screen that we'll be seeing here in the audience, but which won't be available to our Internet participants, I may stop you in order to describe what we are seeing on the air, so that people can participate with us.

So with that I'll turn the microphone over to Bob Grow.

MR. GROW: I'm Bob Grow. I'm with the Electricity

Ad Hoc Information Committee Workshop, September 18, 1998

Analysis Office, right here at the Energy Commission.

And actually a lot of my graphics are on the Internet. And the they are at to the document section in Market Information. So you can find them there. I will also have some Excel spreadsheets, but those are not on the Internet.

So I'll begin by describing SB 1305.

And I am waiting for the screens saver to go away. And now we get the wallpaper.

PRESIDING COMMISSIONER MOORE: Bob, I'm going to ask you to pull the microphone closer to you and speak into it so that we can make sure that it's getting recorded.

MR. GROW: Okay. Now we're bringing up Power Point.

Okay, our SB 1305 basics. Now SB 1305 is a law passed by the California Legislature last fall. And it sets up several mechanisms related to the marketing of electricity by retailers, especially the marketing of special power. That is nongeneric power.

So one of the requirements of SB 1305 is that retailers have to disclose the origin of their power.

And by origin I mean basically what is the fuel type or technology that created the power. It's not origin in the sense of what state it came from, but rather what kind of power plant it originated at.

And if the retailers claim some non generic origin of their power, such as especially green power, they need to

Ad Hoc Information Committee Workshop, September 18, 1998

document those claims and show that they really did acquire some nongeneric power that they could resell to their customers.

And the law gives the Energy Commission some special responsibilities. And one of them is to administer a verification system for retailer claims.

And the verification system kind of takes two approaches at once. On the one hand we ask the retailers to submit a report that reconciles their sales of particular electricity products, such as perhaps you might have a green product, reconcile those sales with corresponding purchases of the kind of power they claim to be selling.

And our regulations, which are pending right now at the Office of Administrative Law, require the retailers to submit audited reports that would show how all of the power that they claim to sell was backed up by purchases, corresponding purchases.

And at the same time the Energy Commission has a program in which we collect data from generators on how much they generated. So for any particular generator we should have information about how many kilowatt hours they generated in a certain period.

So you could imagine that there's let's say a geothermal plant somewhere in Northern California, and retailers, perhaps several of them, make claims against this geothermal plant saying that they had bought geothermal power.

Ad Hoc Information Committee Workshop, September 18, 1998

Well, perhaps the sum of their claims is, let's say, 100,000 megawatt hours. Well, the Energy Commission should have data submitted by the geothermal plant that it generated at least 100,000 megawatt hours. So if the claims match then we consider that the claims are credible.

And another job of the Energy Commission under SB 1305 is to determine the content of generic power. And we call that net system power.

And net system power is the power that's generated in California less the power of that subject to special claims. It's the content of that power that we determine, such as 20 percent hydro, 20 percent nuke, 30 percent gas, and whenever is left.

So every year we're supposed to determine the content of generic power. And the purpose of that is to provide a basis of comparison for consumer claims.

And I have a paper handout, not available on the Internet, that gives a little flow chart, that shows how the information is supposed to travel in SB 1305. And it has a explanation of each of the steps. And that would be a lot more complete than what I have said here but I think we have enough to go on.

So I'm going to also talk about how reporting is done under SB 1305. And so far there hasn't been any reporting done because we are just beginning and our regulations are not final.

Ad Hoc Information Committee Workshop, September 18, 1998

We have here some sample formats for reporting that we're still working on. But we intend to post these or something like the on our Website soon so that retailers and generators can download them and use them.

So let's look at a generator report. Now under SB 1305 we're actually supposed to get hour-by-hour generation from all the generators. And we either get that directly from them or we get that through their system operators.

We have talked to system operators and generators, and while it would be possible to get hourly data, but it would be cumbersome. And the fact is that we don't really need hour-by-hour data.

So we are making the submission of hour-by-hour data optional. If that's convenient for the generator we'll take it. But really we just need quarterly data.

But this spreadsheet here is set up to allow the reporting of quarterly data by generators. And our screen here is not sharp, so it may not be possible read all of the entries on the spreadsheets. But all these are boxes that are available for entries.

And while the reporting company can just pick what quarter they're going to report and what technology they use, like this one a share typical Nuclear Station backed up by wind secondary fuel. But now we'll switch get to the geothermal backed up by solar. But you don't have to have a secondary at

Ad Hoc Information Committee Workshop, September 18, 1998

all. Many plants don't. So let's go with none. Geothermal and none.

And so then we just put in how many kilowatt hours were generated month by month. And SB 1305 requires that there be a estimate of the amount that was generated with a the primary fuel as opposed to the secondary fuel.

Well, if there is no secondary fuel of course it's very easy. If there's a secondary fuel we need an estimate.

(Comments off the record.)

MR. GROW: Okay. We're trying to eliminate noise in the microphone, apparently not too successfully.

So a generator could submit something like this, email it to us, and that would be reporting on the generator side.

And as the flow chart shows we need reports from both ends of the pipeline. This is from the generator end.

And from the retailer end the reports are not just to us but rather there are disclosures required to the customers. And their disclosures are quarterly. And they're based on projections of what the retailer intends to purchase on behalf of its customers and then deliver to its customers.

So in this case a retailer can fill in all of these blanks, how much they intend to sell, how much they intend to get from the various sources.

And the spreadsheet will make them a power content label which is required to go on their promotional materials

Ad Hoc Information Committee Workshop, September 18, 1998

under SB 1305 regulations.

So there you have a power content label. And we have a power content label and explanation all about it on our Website. So they can go through and make for quarterly reports.

And then the they make one of these. This is an annual report. And the annual report is a way that we verify claims. And this is the one that is supposed to be audited.

So if they use this reporting format and they've filled in all those quarters they can hit this button here and it should compile them a report.

And -- okay, I think it's done.

Okay, there is the report.

So in this case the company needed to prepare what we call the annual label. And the annual label is done whenever the projections weren't borne out by the actual performance or the actual deliveries to the consumer.

And in this case the reason they had to make an annual label is because they delivered quite a bit more eligible renewable to their customers than they said they would. So that shouldn't be difficult.

This describes our --

PRESIDING COMMISSIONER MOORE: And, Bob, that filing system is available electronically. We expect electronic filing of those results, correct?

MR. GROW: Right, it will be.

Ad Hoc Information Committee Workshop, September 18, 1998

Now the way the purchase information gets in by these blanks here. We need the generator ID, what kind of technology it was, and how many kilowatt hours were bought.

And this blank over here, called voucher number, gets me into my next topic which is how we would have a voucher. And well, that's what tagging might provide.

Tracing generation sources through a tradeable commodity system. I use these words "tradeable commodity system" because they come right out of SB 1305.

SB 1305 says that -- well, let me read right out of SB 1305 and we'll see what it says. Let's see, they're talking about specific purchases.

"While specific purchases means electricity transactions which are traceable to specific generation sources by any auditable contract trail, or equivalent, such as a tradeable commodity system that provides commercial verification of the electricity source claimed has been sold once and only wants to a retail consumer."

Okay. That's what we need is some sort of a verification system that electricity source has been sold once only once and it can be a tradeable commodity system.

So in order to develop a system under SB 1305 we need to think about what is a specific purchase. Because this description of the tracking system in SB 1505 comes under the definition of specific purchases.

Ad Hoc Information Committee Workshop, September 18, 1998

So I have two different ways of looking at specific purchases here. Under one approach purchase electricity from a specific generator on behalf of particular consumers with intent to identify this electricity with electricity delivered to the consumers, that would be one way of looking at it. And that's pretty much the way we have looked at it.

But you can also look at it in more of a tagging perspective and that would be purchase of generic electricity from the grid plus the right to claim origination with a specific generator with the same intent as the other one.

And I ask: Is there a difference?

And I think I contend that basically there isn't a difference. And when you try to look at what the differences would be it comes down to what are the delivery requirements. And so I have on this page a hierarchy of delivery requirements.

And the most demanding delivery requirements would be that you have special power if that power is generated on site or it's delivered by a dedicated wire. That is, there's just one wire that goes from the generator to the user, so we know what kind of electricity is on that wire. It's the kind that originated at the generator.

Well, that's totally impractical. It's not entirely impractical in regard to onsite generation. But if we want a system in which green power can be traded it can be in the market then on site generation would not do it.

Ad Hoc Information Committee Workshop, September 18, 1998

But I think there are marketers that are interested in selling on site generation, especially roof top PV. And while they have a selling point in that whoever uses that roof top PV can be sure that they are using solar power.

Another requirement would be that we have a scheduled path, from the generator to or near the consumer, plus simultaneous generation and use.

That would be pretty demanding. We would require that the generator be running when the consumers are using the power and that there be a transaction scheduled over the transmission system, such as through the Independent System Operator.

We could go another step and we could say that the delivery can be anywhere in the grid, but if you want to count it as a specific purchase there must be a simultaneous generation and use.

That's also pretty demanding. I think they're making that requirements in Massachusetts. And the marketers say they can't live with it.

And take another step and we have scheduled path to or near the consumer but no requirement for simultaneous use.

And the problem with that one is that if you have a scheduled path what are you scheduling it for since the power that you are scheduling over it is apparently not being used by the customers that are buying the special power? And it would be cumbersome and not very necessary.

Ad Hoc Information Committee Workshop, September 18, 1998

Last in the hierarchy here is delivery to anywhere in the grid. And the generation and use have to be in the same day, week, month, quarter or perhaps year. And if you read SB 1305, at least in a liberal interpretation, what we have is delivery requirement number five and the period is one year. So we have that already. And here I observed that.

Once we eliminate the requirement for simultaneous generation and use, the consumer has to be getting generic energy at least some of the time. That is, the consumer of special power or the customer of a specific purchase has to be getting generic energy at least some of the time.

Therefore, we must be allowing the transfer of claiming rights, at least between parcels of energy. So I think it was argued at some time that the difference between having tags and not having tags is that with tags the claiming right is separable from the energy. And with settlements it's not.

But I think it turns out that with either settlements or tags the claiming right is separable. So there is such a thing as a claiming right. If you are going to have either a settlements-based approach, at least one that doesn't have extremely rigorous delivery requirements, there is a claiming right. It does exist separately from the energy itself. And it gets created at some time.

Now I think there can be two ways of creating one. One is by generation of energy from a specific facility and the

Ad Hoc Information Committee Workshop, September 18, 1998

other is by purchase of energy from a specific facility.

I think if you use the settlements-based approach you probably end up with that second method of creation. The claiming right comes into existence at the time someone, such as a retailer, makes a specific purchase.

That is a specific purchase described in terms of fuel type or technology type. And I say that the former method would be better for the generator, because if the claiming right came into existence at the time energy is generated, the generator could bank them and sell the energy as generic, but retain the rights to claim and sell those later if the generator could find a customer.

Transfer of a claiming right. This is an issue in regard to tagging verses settlements. And one way to transfer would be from one parcel of kilowatt hours to another parcel by the original purchaser. So that's not a lot of transferring. But there has to be at least that much transfer if we're not going to require that generation and use be simultaneous.

Then we could go from one party to another by a sale of kilowatt hours. And I think this is a method that's generally contemplated in a settlements-based approach, or you could have from one party to another by a transaction on paper, such as a green power generator could sell energy as green and then buy the same energy back as generic. And it would have, in effect, sold the right to claim green and end up with some energy.

Ad Hoc Information Committee Workshop, September 18, 1998

And marketers or retailers have said if we have a requirement of transfer from one party to another by a sale of kilowatt hours, this will be indistinguishable from this other method where everything just happens on paper.

And our last method here is we have the transfer of a claiming right from one party to another by a tag or ticket, which is a pure claiming right.

We needed to document claiming rights in order to keep track of them for programs such as SB 1305. And if you have a settlements-based approach, then I think the documentation for claiming rights is by way of invoices.

You can have an invoice for the sale and purchase of so many kilowatt hours of, let's say, wind power. And the invoice documents the transaction and applies the characteristic wind power to the kilowatt hours in the transaction.

If wind power or whatever a special kind of power is tradeable once it's purchased, then you can have a chain of invoices that would document the original sale plus subsequent sales.

And in order to track the progress of a certain parcel of energy from generator to consumer, you would need to audit and track the chain of invoices. And now adding tags or tickets, we could create a tag or ticket -- and let's just call them tags -- at the time of the original sale.

And the that tag or ticket could then accompany the

Ad Hoc Information Committee Workshop, September 18, 1998

invoice. Let's say it would be stapled to it. And it could follow along the contract trail.

And I think the advantage of the tag or ticket would be that it would be a standard means of documentation for all of the facts we need to document in a tracking program. And if you had tags or tickets, arguably you wouldn't really need the invoices because the tags alone would be sufficient documentation.

And what needs documentation on a tag or an invoice? We need generation by specific facilities, so we have to know how many kilowatt hours and what its characteristics are. And then we document the sale by the generator of the right to claim some or all of the kilowatt hours as the origin for what might be delivered to consumers or what will be delivered to consumers.

And we need to assure by our documentation that the sum of the claiming rights sold, in terms of kilowatt hours is equal to or less than the total generated each period. If we have more claims than we have kilowatt hours, then there has to be something wrong.

How to document? If you use invoices, they may not be standardized. Every company could have a different kind of invoice. The invoice might name the seller, but it wouldn't necessarily be certain documentation of the origin of the powers. You can have an invoice where Bob's Wind Farm sells

Ad Hoc Information Committee Workshop, September 18, 1998

100,000 kilowatt hours, and it would look like it was wind power. But Bob's Wind Farm could buy generic energy on the market and sell it on its invoice.

So I think it would be better to be more specific. And while it may not commit the seller to a complete description of the product in terms of the fuel type or technology, such as we're interested in 1305, and it may not account for all of the kilowatt hours, because if you just go by invoices we don't know how many kilowatt hours there are per period. So if we add up sum of the invoices, we don't know what it should equal. And I think if you use tags, you could, if you designed it well, solve the problems you have with the invoices.

Keeping everybody honest. With tags only the generator can cheat but the meter reads could detect it. Maybe there's some way to cheat with tags, like counterfeiting them. But I think that would be difficult. Anyway I'm not as concerned as some other people might be about cheating. I'm not sure there's a lot of cheaters out in the world, at least in the electricity generation and marketing world.

Maybe I'm naive, but I think most of the people want to be honest anyway. Okay. If the generator cheats the parties down the line should be able to have a civil action for misrepresentation. And I think it would be very useful in whatever tracking system we have, whatever we have for implementing SB 1305, if the government really doesn't have to

Ad Hoc Information Committee Workshop, September 18, 1998

get involved, such as in a prosecution for perjury.

Prosecution for perjury would be very messy, difficult. It might be hard to win. But parties to contracts ordinarily have civil remedies against each other, and we could just rely on those.

And if we have the tagging program, a consequence of abusing it could be that a generator could be kicked out of it, that is, not allowed to use tags. And since it would be our program, we could make those decisions.

Okay. What is a tag? A tag would be a certificate declaring generation of a stated number of kilowatt hours by stated technology or fuel and placement on the WSCC grid. It gives the generator ID number. It grants an exclusive but transferable right to claim. It's tied to a report of total generation each period, so that we know what the sum of the kilowatt hours should be.

And here is a little tag. It says, "Certificate of Specific Generation." And the generator certifies so many kilowatt hours were generated and placed on the grid, gives his number, gives his fuel or technology. He gives the period, and he signs it.

And it has been mentioned already that some states are interested in things other than fuel or technology. And I think you could use the same certificate for whatever, such as you might be interested in emissions. Well, once you have the

Ad Hoc Information Committee Workshop, September 18, 1998

generator number, then you have enough information to count things other than fuel or technology, such as emissions, that is, if you know the emissions' characteristic of that generator with that number.

And I have a handout here that is more detailed example of what a tag might look like. It's an eight-and-a-half-by-14 page with some language on the front and space for endorsements on the back. And the endorsements would be like the endorsements on a check. If it's made out to you, you can sign the back. And then it's transferable to somebody else. And if they want to transfer it, they can sign under your name, and so on.

Now I have a slide-out that says, "What about losses?" And I don't think this slide is on the Internet, because it's just come up very recently. And it also relates to, let's say, the sense of community or what is a region?

And in our current regulations we treat all of WSCC as if it was at the load. That is, if you buy some special power, let's say, 100 megawatt hours of special power in Alberta, you can sell 100 megawatt hours of that special power in Southern California as 100 megawatt hours, not as 95, 90, or 85, or something like that, but as 100.

And so there's no penalty for being distant from the load. And in a real system there is a penalty for being distant from the load. The penalty is there are losses over the line.

Ad Hoc Information Committee Workshop, September 18, 1998

So if you buy power in Alberta and you want to get it to Southern California, that's a long way and there's going to be significant losses. So we're just putting forward the proposition here that perhaps we should deem losses based on the location of the generator.

An example of a deeming losses might be we could say something like: Well, if power crosses one state to border there's four percent loss. If it crosses two state borders that's -- four plus four is eight percent. If it crosses an international border, add another eight.

So if power comes down from British Columbia, that's -- eight plus four plus four is a 16-percent loss to California. Well, at least it's simple. If you try to measure losses, it's very difficult. And besides that it changes as the loads on the system change. So just an idea.

PRESIDING COMMISSIONER MOORE: Well, Bob, let's just point out so that we don't have our Canadian neighbors trying to climb over the phone line at us here. Your 16-percent figure was illustrative.

MR. GROW: Yes. Illustrative only.

PRESIDING COMMISSIONER MOORE: And not definitive.

MR. GROW: Absolutely.

PRESIDING COMMISSIONER MOORE: But we would, were something like that to ever come about, we would establish a protocol of some kind that would be negotiated and would then be

Ad Hoc Information Committee Workshop, September 18, 1998

implemented. But 60 percent --

MR. GROW: And, of course, we would expect that other places would have the same sort of requirements so that if we were sending California power to Alberta, there would be solar mechanisms applied.

But, as I said, this is just an idea. And it's also a new idea. And so we would have to think about it quite a bit and get input about it.

PRESIDING COMMISSIONER MOORE: Bob, let me also point out that when you were talking about the tag itself, the potential of a certificate that could verify a transaction taking place, in reality we're talking about electronic certificates. We're not talking about a paper trail that could move back and forth.

Our paradigm here is the stock market, or the commodities market, where things transferred in an accounting mechanism rather than having to move mountains of paper back and forth.

You could get a paper record if you desired it, but in fact a transaction is not dependent on having a paper stamp.

MR. GROW: I think I agree with everything you said, but we haven't worked out those details. And I think if we did use paper, we would probably end up with much less than a mountains. So at least to begin I think we could use paper.

PRESIDING COMMISSIONER MOORE: Okay. Well, I just

Ad Hoc Information Committee Workshop, September 18, 1998

want to point out that at least in the discussions between the Commissioners so far we've relied on the idea of an electronic market as opposed to something that would be a real gilt equivalent --

MR. GROW: Okay.

PRESIDING COMMISSIONER MOORE: -- in the sense that the markets use it where you can request one, but you don't actually need one to make the transfer.

MR. GROW: Okay. I don't have anything else.

PRESIDING COMMISSIONER MOORE: Thank you, Bob.

I think there are a couple of things that we might want to explore in that presentation. And in order to get this conversation going, let me just start with a question that I think may open the rest of the Staff presentation. And that is can we imagine what the furthest verifiable point from its origin might be that's feasible to use for tracking. In other words, what's the furthest away point? Do you go through an independent systems operator, or do you go through a scheduling coordinator? Where is the furthest point away from the generation that it's feasible to say we can still track its origin with veracity?

MR. GROW: Well, I might may not be an expert on this, but I'm comfortable with tracking anywhere in the WSCC. It's an interconnected grid. And at least there is a way to get power from any one place in the grid to any other place. So I

Ad Hoc Information Committee Workshop, September 18, 1998

think we could track the whole region. And I suspect that we can't track outside the WSCC, such as -- well, maybe somebody from Illinois wants to sell some power into California. Well, I don't think we could handle that because we're not, as I understand, interconnected with Illinois.

PRESIDING COMMISSIONER MOORE: All right. I know some of the Staff would like to comment a little bit on certificate-based tagging.

But let me turn to Commissioner Gillis and ask if he's got some questions on the presentation?

MR. GILLIS: Not at this time.

PRESIDING COMMISSIONER MOORE: All right. Were there comments from Staff on certificate-based systems? I have it in my notes that -- come on up. You might want to come to the table here.

MR. CARVER: I know it's not the microphones here.

PRESIDING COMMISSIONER MOORE: You know, I apologize for that rattly noise. It apparently is a function of the phone system we set up in case anyone calls in. So it apparently is not someone rattling the microphone around.

MR. CARVER: Is this on? Yes.

For the record, my name is Phil Carver with the Oregon Office of Energy. And I think that was a very clear presentation, Bob, and it was real helpful.

The one thing about losses, we began to deal with this

Ad Hoc Information Committee Workshop, September 18, 1998

a little bit in the formation of the independent operator for the Northwest called Indigo. And that my recommendation for losses initially would be to do something very, very simple.

But you do have to deal with it in the sense that if you take the sum of the generation and compare the sum of the sales you really shouldn't come up to 100 percent because of some of that power does get lost. And the loss calculations are very, very complicated from an electrical engineering standpoint. They are not linear.

That is, when you add another load it adds more losses on the previous load. And if you add generation and load to an integrated system that -- but everybody in a sense is the incremental generator in the incremental load.

So it's not clear who you would assign the incremental losses to, because if you assign the incremental losses to every user you'd have more than the sum of the losses. The sum of the assignments would be equal -- larger than the total.

So just very quickly you realize that it's not something that you can get sort of right from the start from an economic standpoint. From an economic standpoint you'd like to assign incremental losses to sales in transmission charging and then, I presume, in some kind of tagging system if you're trying to sort of calculate which is the more valuable and which is the less valuable resources. And it's just really, really very complicated.

Ad Hoc Information Committee Workshop, September 18, 1998

And at some point we may be able to work it out, particularly if we get a larger expansion of the independent system operator concept so we have a handful of system operators in the West.

But for now I think that one of the -- what I would propose is that we just -- since the concept of tagging is that these assignment of rights would be transferable anywhere in the West, and you could generate somewhere and then anyone in the West could buy it. I think you just want to take the total aggregate generation in the Western interconnection, the 11 Western States, BC and Alberta, and then take the aggregate loads, retail loads in the West and take that ratio and just assign it to every load and every certificate and say that's the amount of generation and that's the amount of loads. And the difference between those two on a percentage basis is the losses.

And if we move on, and we have a smaller number of control areas, you know, way smaller than 30, then we might be able to move to a system where you could assign losses on a power pool basis.

And then if you transferred between power pools rather than states you might say the power pools -- of which there are, I think, about six.

But BC tends to be relatively separate from Alberta and so could set up BC, Alberta, and then the Northwest Power Pool,

Ad Hoc Information Committee Workshop, September 18, 1998

U.S. portion, which is Wyoming, Montana, Utah, Idaho, Oregon and Washington. And then the Rocky Mountain Pool, which is Southern Wyoming and Colorado, and then the Southwest Power Pool which is Arizona and New Mexico. Oh, I left out Northern Nevada out of the Northwest Power Pool. But anyway -- and then California, which is part of the California and Southern Nevada Power Pool. So you could do that.

But I think initially that's way too complicated to try to do losses by power pools. So that's just one of my initial thoughts on losses. We haven't really written of anything or thought much more about it then that.

PRESIDING COMMISSIONER MOORE: Well, Phil, let me go to losses offers for a second and ask you the question: What happens, or how would you account for power that's generated but doesn't have a buyer, if you will, it goes into the grid but actually gets it gets grounded out because it's simply not consumes?

MR. CARVER: That doesn't actually happened electrically. There has to be a -- occasionally they turn on at Bonneville they turn on what are called the toasters. And the they are a giant electrical set of wires. And if they are over generating temporarily, because the hydro turbines can't be turned off quickly enough, because of a loss of load, these things light up.

I've never actually seen one but I've heard stories.

Ad Hoc Information Committee Workshop, September 18, 1998

But there is never electricity grounded to load. It's grounded out. It's an AC system, alternating current system. And I don't think you can do that.

So the sum of the generation goes somewhere and it goes to either losses or loads.

PRESIDING COMMISSIONER MOORE: So of there's never a case where you don't have enough load to match generation?

MR. CARVER: You have to match load it to generation or you get over frequency. You start to get more than 60 cycles a second. The generators get faster than the -- and I understand that in their first couple days of the California ISO that they had a slight over frequency just as a start-up problem.

What that was happening the load was spilling -- the generation was spilling out into other control areas.

But I think that -- it's my understanding that basically that the total number of kilowatt hour goes somewhere. And it goes to loads or losses.

PRESIDING COMMISSIONER MOORE: You know, you've written some materials for us before for discussion. Do you have any thoughts on the clearing house that Bob alluded to? That if you had a central clearing house it's got a to match in and out, so it's talking to two groups at the same time maintaining some sort of simultaneity in record keeping.

Do you have any thoughts on how that would work?

Ad Hoc Information Committee Workshop, September 18, 1998

But right now, as Bob said, we're set up to do a set of verifiable claims. So in that sense here in the Energy Commission we have a system ready to accommodate that.

What we are waiting for is our rule to get approved by the Office of Administrative Law. Would the system that we have here be, in your mind, a good model for a clearing house wherever it might be set up?

MR. CARVER: I think that it is a good model.

All the a -- virtually all of the specific purchases in the West are happening in California. There are a trivial amount of pilots going on in -- I understand, Montana is about to -- or for the large industrial customers has retail access going on. And Arizona is about to go and at the end of '99 Nevada may go to retail access.

But really in terms of a market for desirable or green, or nuclear, whenever people want to buy -- type power, California is where it's at.

And so having it all right now in the California Energy Commission is totally appropriate.

As we move to a Westwide system it might be useful to have a nonprofit interface. And the they might be a shell in which it's just -- the people sending it to the non-profit and it contracts out with the California Energy Commission to do the actual number crunch and so on, or the nonprofit could contract out to a private firm.

Ad Hoc Information Committee Workshop, September 18, 1998

But I think it might be useful to set up a 501(c)(3) type of organization so that the -- when we're talking to Western legislatures outside of California, they say "Well, who's keeping track of this data?" We say, "Well, that the responsibility for this resides with this nonprofit entity."

We've done that in Oregon in the number of cases, set up non profit entities to track data and even keep money from a various activities. And that seems to go over well with the legislatures.

The idea it seems less bureaucratic and more independent and more accessible to the industry. I think it maybe a difference without a distinction. But it may be a kind of a nominal the station that's useful in terms of getting bills passed or talking to Western legislatures.

I went to the University of California in San Diego, and most of my relatives live in California. But there's sort of -- you're such a large fraction of Western population. I think it's about 56 percent, that it's sort of a 500-pound gorilla phenomenon.

PRESIDING COMMISSIONER MOORE: Which is not always the most enviable position to be in.

MR. CARVER: No, no.

PRESIDING COMMISSIONER MOORE: We've been talking about certificate-based systems primarily. Do you want to just recap the critique that we had before on settlement-based

systems?

MR. CARVER: Well, I think Bob did a real good job. I think that there's -- you end up as you try to do a settlements-based -- it tends to look like -- tends to work much like a certificates-based system.

And if you actually issue certificates, either electronically or paper copy, then it just simplifies the system and makes it a little easier to verify the specific purchases.

So it's sort of an evolutionary concept. It's something we all, as we studied this over the last three or four months, just kind of kept a stumbling towards on this. We tried to make it in writing papers in much -- and I think Bob did a real good job of summarizing sort of the evolution of our thinking in a very compact way.

PRESIDING COMMISSIONER MOORE: Okay. I appreciate that.

Bill, do you have questions?

MR. GILLIS: Maybe you can talk a little bit to Phil about the component of calculating the net residual mix and where that would fit in with the current California approach.

MR. CARVER: Yes. The net residual mix can be calculated many different ways. And since it's sort of a gross calculation in the sense it's only a double digit, or maybe -- in terms of the accuracy of the information the specific purchases are not -- can be estimated in various ways and taken

out of the residual.

But the most important thing is that the some organization collects all the specific purchases from all the states for basically all the claims and adds them up and uses that sum by generator to, one, verify that the -- as Bob said, the sales don't exceed the amount of generation.

And second that you take the same number and you subtract it from the other -- from the total generation, either in that power pool, or that state, or whatever region you're trying to characterize. And then you have the net system mix, much as California has done for the California region.

And it's just that you need an interstate organizational structure to make sure that all the different states send their data in a common format to this clearing house or some type of organization that calculates these residuals.

And then each state would have to specify for its label, or for whenever billing or department it had, what residual they're referring to.

It might be that a group of states in the Northwest might say we just want to use the Northwest Power Pool, U.S. portion. And we all just share it.

But if one state, say Wyoming, said, "Well, we want to have the Wyoming portion of the Northwest Power Pool," we'd have to make sure that we took the Wyoming part out of that. So Wyoming's residual would be only Wyoming. And I'm just picking

Ad Hoc Information Committee Workshop, September 18, 1998

on Wyoming because I was born there.

And then the rest of the states will take the Northwest Power Pool, U.S. portion, without Wyoming. And it's just important that all those residuals if people join it by region is California's doing by region or state that they calculate the residual so the sum of the residuals add up, the sum of the claims plus the sum of the residual assignments and up to the total of generation of the West. This requires a little coordination and communication.

PRESIDING COMMISSIONER MOORE: Well, why we take a couple of minutes and talk about why this matters, because we're spending a great deal of time in talking about the characteristics that can be accounted for.

The listener or the reader of this issue this has got to be asking themselves the question, so what? What's the value of this? Electrons are electrons no matter where they are generated. They don't carry a color. They don't behave differently once they come into an appliance, or once they move a device.

So why do we care about this? What is our advantage in trying to create something that calculates, for instance, residual system mix?

Or as I described in an earlier remark, when I was in Denver, where we were focused on the Environmental characteristics of electricity, it would be easy to imagine

Ad Hoc Information Committee Workshop, September 18, 1998

green verses what I might call anti-green to describe a range or a spectrum. And the characteristic of anti-green could be just as valuable to someone as the characteristics of green.

In other words, once we know what each characteristic is, the system, transferring system, will be clearing all the time. Some characteristic will be created and either cleared or another characteristic will be cleared at the same time.

You can't work up a bank of characteristics that in the end is in excess of the amount of electrons that are generated or consumed.

So we might spend a little bit of time in talking about what's the value of the characteristics. In fact, I know that there's a representative from APX here. We may call on her to explore just a little bit of their experience in the market why people care what's -- why is the market even care about this at all?

So let me toss that back and see if we can open discussion. That will lead us, I think, to a discussion about where the data comes from and how we can measure it with some accuracy, allowing for the discussion that Phil brought up before about losses.

So with that, Tom, do you want to introduce yourself?

MR. AUSTIN: Sure. My name is Tom Austin. I'm with the Regulatory Assistance Project, and I've been functioning as sort of a Staff, or coordinating person with the group of

Ad Hoc Information Committee Workshop, September 18, 1998

Western States that have been looking at the disclosure and tracking kinds of issues.

I think I heard two questions sort of floating around in there. One is sort of, "Why bother more broadly with the tracking and disclosure effort?"

And the answer there seems to be clear in a couple of kinds of senses. One is what I to understand to be the experience in California so far with marketing where a fairly substantial chunk of the folks who have decided to switch have chosen green products that were more expensive. So there's a clear demonstrated demand in the California market.

There's good evidence that there would be a similar kind of green demand from some surveys that have been done, surveys of various kinds that have been done by the National Council on competition in the electric industry. So that's the larger why.

I want to comment just briefly on another question I think you raised, Commissioner Moore, which is, "Why should worry about the residual or the ground mix," and, "Why is that important?"

And it seems to me that's important for two reasons. The first is that based on, again, some of the National Council research, customers throughout the country have a pretty poor understanding of what the sources of electricity are.

For example -- and I think I'm remembering correctly --

Ad Hoc Information Committee Workshop, September 18, 1998

when asked the primary source of power in their region, the national survey, nine percent of folks said it was a solar. Well, if you know anything about the national grid nobody would have reasonably said solar. So one reason for the --

PRESIDING COMMISSIONER MOORE: And that's because there's such a smaller fraction of one to two percent that might be accountable.

MR. AUSTIN: Sure, solar nationally is a small fraction, one percent of the overall generation.

And basically it's because customers, unlike probably most of the folks in this room, don't spend lots of their time obsessing about the electric system. They've got lots of other things to worry about.

And, you know, one of the results is that a lot of people just don't know much about the electric system and the problem it creates -- well, let me back up.

Many people tend to think the electric generating sources are the kinds of things that they read about mostly in the paper naturally enough. What they read about mostly in the paper tends to be the cleaner greener things.

You take a look at what people where people think their power comes from, they think there's a lot more hydro than there really is. They think there's a lot more of the other renewable sources than there really is. They think there's a lot less coal and to some extent nuclear than of there really is. So the

Ad Hoc Information Committee Workshop, September 18, 1998

problem is they have this fairly green picture of the sort of what the clean flow of product is.

The problem we're into then, when the green marketer comes in, is that they're marketing against not the real competition but rather customer's perception of the competition.

The customer's perception of the competition is really too green. So that's one reason for the -- one reason to have sort of the system mix label on products which don't make a claim.

The other reason is going to be a new one. And that is that to the extent that the green market flourishes the green resources will be drawn to green customers. They'll be paying a premium for them, encouraging the development of new green resources, one hopes. But at the same time we have to make sure that we tell those customers who opt not to get the green product that what they're buying is that much less green, if you will.

So those, I think, are the two reasons there.

Do you have anything to add, Phil?

MR. CARVER: Just I think one thing. Correct me if I am wrong, but I think -- and the researches show that customers did a lot better with a pair-wise comparison where they had -- you know, they could choose between A and B and C. And A, and B, and C, all had the same sort of information laid out.

So if people are choosing between a green marketer that

Ad Hoc Information Committee Workshop, September 18, 1998

has some specific product, or a nuclear market, or somebody who has something that has some desirable characteristic and not doing that, well, then the not needs a number and is basically the same kind of information so people can say, "Oh, I don't want to choose that, I want to choose this."

And this is kind of compounded by the misperceptions that people have about their system.

So if somebody really went to the trouble, a marketer went to the trouble, of creating a pretty green mix, and took it to the customer, without a residual comparison the customer would say, "Well, I'm getting that already, that's not any greener than I think I'm getting now."

So they wouldn't be willing to pay for it even though there had been a significant improvement in the product that they would have gotten in terms of the sources that would have contributed to the power. I think that's a contributing factor.

MR. GILLIS: If I could follow up. How important you think having a credible tracking mechanism used to the development of the green market?

I'm thinking in the area of telephones that run into the cramming and slamming phenomena of consumers not having confidence in competing providers is because the marketplace doesn't seem to be performing for them.

And could you respond to that event?

MR. AUSTIN: It's important, and it's important for

Ad Hoc Information Committee Workshop, September 18, 1998

two reasons. The first is that if customers don't really believe that they are buying a green product or getting a green product they're not going to want the product. So there's a level of credibility that's necessary for the market to even exist.

The second is a slightly more subtle piece, which is that even if customers accepted a lousy tracking mechanism, if the tracking mechanism were so bad that one didn't need to have or make a green product, produced from renewals, for example, in order to sell his renewals, then the real economic impact of the market would be destroyed.

That is to say customers would vote with their dollars to buy more renewals but that money would not go to somebody who was building new windmills or new solar generators or whenever. Instead he would go to the guy who was making these false claims.

And you wouldn't have the desired economic effect in that case of encouraging the development of the kinds of resources the customers really want. So it's important for both reasons.

PRESIDING COMMISSIONER MOORE: Okay. What, in terms of data sources, -- what do you think it takes for a generator to participate in this and be able to accurately portray what they're generating, I mean besides the Macintosh based PC, to make sure that the information gets out?

Ad Hoc Information Committee Workshop, September 18, 1998

MR. CARVER: I think it's probably pretty straightforward as long as they use the same number that they do on the EIA reporting form. Then the EIA data is going to be the basic thing that you can check against their reporting. So I don't see there's any real danger of them reporting more than they --

PRESIDING COMMISSIONER MOORE: So in this case you think that the Energy Information Agency or the EIA is in a sense the ultimate auditor, or the audit back-check?

MR. CARVER: Yes. If their proposed disclosure approach on terms of cumulative generation over a year, or quarter -- I can't remember -- then I think that data would be publicly available even in terms of the end.

I've talked to people at EPA and they are planning to combine that EIA database with the their pollution and emissions database so that you would have basically one database that would be publicly accessible.

And in this case of the timeliness, if it takes them a year or two, to clean up the data and get it so that it is real usable, that wouldn't be an issue because it uses a civil lawsuit of the retailers taking a civil action against the generators. That would take several years in the courts anyway.

So I don't see -- I haven't come up with anything -- I haven't been confronted with anything that caused me any concern the generators filling out forms and doing so accurately.

Ad Hoc Information Committee Workshop, September 18, 1998

They're the ones who actually -- they can move. You know where they are. They can't take the generator off to some other country --

PRESIDING COMMISSIONER MOORE: Can't pick the plant up and move it during the night.

MR. GROW: And also we know where they are. And there's only about -- I think there's about 3,000 generators in the U.S. So although it sounds like kind of a big number for a database and tracking system that's really not very hard at all.

MR. GILLIS: Do the publicly provided databases from EPA and EIA, are they a comprehensive system for both the publicly-owned and the privately-owned generators?

MR. CARVER: Yes. They're comprehensive in that sense. They're not quite comprehensive and down to the size of generators. There's some small generators. And there's the issue of self-generators, whether you want to have them in the database or not.

And I think some of the self-generation, almost by definition, doesn't have to be reported because it's not put on the grid. I don't think there's any reporting -- if you were completely self-contained, I don't think you're part of the reporting system.

And there is an interesting option or opportunity, that you could actually have a self-generator sell their characteristics of their power and then they could -- and you

Ad Hoc Information Committee Workshop, September 18, 1998

would add that to the mix. And you need to add sort of the kilowatt hours too and the loads. But that's something we haven't explored yet. It's even smaller than icing on the cake. It's sort of a cherry on top of the cake. I don't know if we want to get into that.

But right now the system I think we're envisioning doesn't really include self-generation.

PRESIDING COMMISSIONER MOORE: Really size should not be an issue here. I mean if you have a one-megawatt generator who is selling into the grid, there really should be no impediment to them being able to use their output in the tracking system as well as someone who generates a hundred thousand megawatts.

MR. CARVER: Yes. I don't see that there is any reason in those, some of the comments to the Energy Information Administration. Maybe they should look at the size requirements again.

PRESIDING COMMISSIONER MOORE: Well, let me go to another issue that Phil mentioned, and I think it's worthy of discussion here, because SB 1305 which started this program in California has in mind some environmental attributes. Now the word "environmental" can be very broadly interpreted to include, for instance, emissions tracking which could, in the minds of many people, be the precursor to a carbon tax, for instance, or a carbon-based evaluation system of one kind or another. I know

Ad Hoc Information Committee Workshop, September 18, 1998

the Vice President has spoken of that in the past.

What do you think the downside of having a system where only one state, for instance, let's just imagine that Oregon was very interested in an emissions accountability system, but no other state was; and you know that a certain amount of your state use is import, not a big fraction in Oregon, but a certain amount, where ever other state was only requiring a limited amount of information, basically the point-source generation type, but not emissions equivalency.

How what that hamper the efforts of a state like Oregon to implement the program internally? And if it were an impediment would it be significant enough to cause them to simply not want to participate in the program?

MR. AUSTIN: Let me take that.

MR. CARVER: Let Tom have the first shot.

MR. AUSTIN: And Phil will tell me where I went wrong.

PRESIDING COMMISSIONER MOORE: Tom Austin.

MR. AUSTIN: The interesting thing, particularly about the certificate tracking mechanisms, but it's really true of any tracking mechanism is that fundamentally what they do is they track a generator to a load. And once the tracking mechanisms track the generator to the load, then it's a fairly easy process to attribute the characteristics of that generator to the load, whether the characteristics are the fuel that it

Ad Hoc Information Committee Workshop, September 18, 1998

uses or the emissions of this, that or the other thing, carbon dioxide, sulfur, whatever it is that you can know about the generator; or in the state of Massachusetts, interestingly the labor content of the generation, that is whether the generator was staffed by people who are members of the union or not.

But all those things sort of flow pretty easily in the event that somebody cares about it. And the somebody who cares about it might be, in your example, the state of Oregon caring about the environmental emissions. Or it might be the marketer, the retailer who has guessed that it would be good to sell power because it's locally generated, for example. And that retailer could similarly use the tracking mechanism with substantially no modification to show they were getting their power from local generation, providing local jobs, presumably not providing local pollution.

But the nice thing about the tracking mechanisms is they tend to be quite flexible and it's pretty easy to transfer most any attribute through. It simply now leaves you with the question of whether Oregon in our example can come up with emissions data on a plant-by-plant basis, which serves their purpose. And depending upon what it is they want, they probably can do that fairly easily for those things which are tracked by the continuous emission monitoring requirements of the Clean Air Act amendments. For those emissions it's pretty easy to do. For other kinds of emissions, mercury for example, it might be

more difficult.

MR. CARVER: If I could follow up, one of the things I think even Tom brought this up, there was a concern -- this is Phil Carver -- that if only one state wanted one particular kind of characteristic and the load for that characteristic was -- or the demand for that characteristic was quite a bit smaller than the sum of the amount of that characteristic that was generated, or the generators that had that characteristic, then that would swamp the particular demand and it would command a very low price.

I think that might happen initially, you would get a very low cost for getting low emissions power. There was in some discussion in some of the focus groups in Washington state, some of the people wanted nuclear power. You might --

PRESIDING COMMISSIONER MOORE: You're talking about getting a very low premium

MR. CARVER: A low premium, right. I'm sorry.

-- a low premium in addition to the regular market price. But I think would just mean that market would tend to expand and that it wouldn't initially cause any more of that particular kind of power to be produced. But I think that's kind of almost a secondary value of a tracking system.

I think the primary value of a tracking and labeling system is that people can express their preferences in the marketplace but, more importantly, they can understand where

Ad Hoc Information Committee Workshop, September 18, 1998

their power comes from. That can affect their willingness to do conservation and other things, if they have an understanding of what their impacts their actions cause. That's almost the psychological definition of "responsibility," is understanding the consequences of your actions and then adjusting your behavior accordingly.

And if people don't understand their power is less green than they think it is, then they're not going to behave as responsibly as they might want to.

So the tracking system we set up initially, I think the vision is as more and more states participate it will grow and become more useful and accurate, and may eventually even become a market force.

That's why we're really excited about the discussions we had in Denver, is it seems like this system might be able to begin and expand really without much legislation and really just as a small adaptation of the California system that's sort of opened up to other states to submit their data to and to help pay for. Then we can have a Westwide system, that there won't be double-counting of sales and we can calculate a residual fairly quickly and easily and have a consistent allocation of the residual.

PRESIDING COMMISSIONER MOORE: Is -- go ahead, Bill.

MR. GILLIS: Just to follow up on Commissioner

Ad Hoc Information Committee Workshop, September 18, 1998

Moore's hypothetical. Would there be any significant administrative burden to a regional clearinghouse if it were established to have one state such as Oregon that might want emissions data and the other participating states didn't initially? What does it really entail?

MR. CARVER: No, I don't think so. I think you would just have -- it would be the responsibility of that state that wanted that characteristic, whether it was union power or some other characteristic, to create a database that said this powerplant is union, this powerplant is not, or these are the emissions of this powerplant and these are the emissions of the powerplant.

We have done it for the Northwest for the pilots in Oregon. It required a little bit of hunting around for the noncontinuous-emissions plants, the smaller plants. But we found some information and we made some proxies.

When you're dealing with a system that's really large, the very small plants have a very, very small contribution to a residual, so it was pretty simple. And Charlie Kris (phonetic) was the one who did all that work. So I'm not familiar with the exact details, but it was just one person, a very small fraction of Charlie's time to do that. So the emissions data is not hard to do.

If you wanted something else like plant ugliness or something, it might take a while to compile it.

Ad Hoc Information Committee Workshop, September 18, 1998

I might comment on the American Rivers and Green-E Program are trying to do something that I think is very valuable, is trying to characteristic low-impact hydro. And if that database was created and adopted by a state, then there would be a way to differentiate hydro in a more sophisticated way than "small" and "large." I think that is of significant environmental impact, and we have been struggling with that in our pilots.

So I think whatever the characteristic is it is really the responsibility of the state that wants that characteristic to create a database that assigns each generator a characteristic. And then that characteristic would then be put in the database and it would be there for anyone to use that chose to use that characteristic.

PRESIDING COMMISSIONER MOORE: Why don't you elaborate on the low-impact hydro for a second, because that's a fairly controversial area?

I mean, for instance, you could have a definition of low-impact hydro in California that might differ radically from one in Idaho. It would be pretty hard to characterize that attribute when it differed state to state.

MR. CARVER: Well, you would have to have a system that covered all the powerplants in the West and you could have the California designation of low-impact hydro and then you could have --

Ad Hoc Information Committee Workshop, September 18, 1998

PRESIDING COMMISSIONER MOORE: Phil, you understand where I'm leading you, is that in saying and in understanding that -- hopefully listening in on the line right now we have representatives from at least 11 Western states -- we're starting to gnaw at the edge of how are we going to cooperate here. If we do this, how are we going to talk to each other? What form are we going to use to resolve something very contentious?

Do we drop it out and say, "Well, okay. That characteristic is too much of a red herring," because depending on what the vested interest is in, for instance, low- versus no-impact hydro, whatever you consider that to be. We do find this whole process grinding to a halt just on definitions.

MR. CARVER: For the record, Phil Carver. No, I don't think it needs to be controversial, in that any system anybody sets up, anybody can set up any system for whether it's union power or ugly powerplants or whatever they want, and it's then up to the state to adopt that system or not. And any state can put that on their label or allow people to sell that characteristic.

The Audubon Society could have bird-friendly power. They could just go around and take all the powerplants and decide -- let's say they want to differentiate the wind powerplants and say these wind powerplants are bird friendly and these wind powerplants are not. As long as they have a complete

Ad Hoc Information Committee Workshop, September 18, 1998

set of all the wind plants and a designation of yes or no or a number associated with that powerplant, that's a little matrix anybody can adopt whether it's a marketer or a state. It's really a voluntary system.

It's not a problem except that one of the parts of this disclosure and tracking system is the concept that if every state has the same label it would make life a lot easier for marketers.

But we're not so Pollyannish to think all states are going to instantly adopt one label. But I think it's kind of a goal and a value to the extent the process is identical and the outcomes are identical, it would be useful to have the labels be identical. But if there are differences in style or content that people want on the label then the labels can't be identical. And that's --

PRESIDING COMMISSIONER MOORE: Well, let's just say I'm a very big energy company -- you don't even have to attach a name to them. But let's just say I have acquired a very big-name wind company. That very big-name wind company had very diverse wind facilities that came as part of the portfolio.

I'm now very interested in the system. I'd like to be able to enter a certificate-based system, be able to have my energy track because I would like to sever that characteristic and sell it at a premium.

Ad Hoc Information Committee Workshop, September 18, 1998

The Audubon Society comes in and says in their rating system, "You know what, 50 percent of this wind company's stuff are not bird friendly. So we're not recommending anyone participate in that program."

And I look at that and I say, "The heck with that. They are too bird friendly." And so I want the Audubon Society to cease and desist from impugning the reputation of my wind facility because I -- yes, it's their judgment. But it's not only impairing my marketing plan, but it's also interfering with my profit structure. And, frankly, it has a potential to screw up the way the tracking system is going.

We have the potential for lawsuits here as well. We need, in a sense, the most neutral and benign evaluations that we can. And when people start doing adders to our evaluation, we start opening ourselves to the arena of legal challenge.

How do we deal with that?

MR. CARVER: Tom.

MR. AUSTIN: Tom Austin. Let me give it a try because there are two pieces floating around in there.

Once piece is whether the tracking mechanism -- how does this relate to the tracking mechanism and the disclosure which California or any other state puts in place. And the answer there is not an issue you really have to worry about. Nowhere on the California label or, I expect, anybody else's label will there be a statement that, "This is wind power which

Ad Hoc Information Committee Workshop, September 18, 1998

the National Audubon Society likes" or "doesn't like." It will be, "This is from wind power." And --

PRESIDING COMMISSIONER MOORE: Well, no. The National Audubon Society would simply in their monthly publication or something else, they would indicate don't buy this product because it's not friendly.

MR. AUSTIN: Okay. That's likely to happen and it probably should be encouraged if -- whether the wind generator has a cause of action against National Audubon or not, I don't know. They can go worry about that just as they always do.

The tracking mechanism can adapt itself easily to an Audubon Society approved product or an Audubon Society nonapproved product. And it does that because what the Audubon Society is basically doing is saying, "Look, okay, big wind company. I've looked. You've got a hundred wind turbines out there. And numbers 1 through 50 I think are just fine. And numbers 51 through 100 I think are awful."

And then if somebody can pull together a product backed by tags for units 1 through 50, which are nice ones, they can fairly say, "My power is coming not just from wind but from wind products the National Audubon Society likes." And the seller who has got their power from 51 through 100 is not going to be able to say that. That's how it will play out.

I don't particularly see where the lawsuits come in unless the generator can somehow go after National Audubon for

trashing their plants, but that's there in any event.

MR. CARVER: I think the important distinction is the tracking system would make sure, would allow any group to go and set up a characteristic they thought was beneficial, marketable, valuable, and make sure that only the sum of the power from those facilities was sold to customers and that no more than that power was sold.

Without some kind of tracking system there's no way someone could assure that -- even if the Audubon Society wanted to do this, they couldn't assure that more than a hundred percent -- it would be very difficult for them to assure that more than a hundred percent of those resources weren't being sold out in the market. It would be a great expense.

So that's what this does, is facilitate a market in new and interesting characteristics and lets the market decide what's valuable and useful, not myself or others who have particular ideas of what things are useful or valuable in the electric generation field.

These are really very difficult to compare, the kind of characteristics between, say, production of sulfur dioxide and the potential that might have for acid rain or particulate haze or health impacts, compared to a hydro dam that potentially is wiping out salmon in the Northwest.

I don't know how we as regulators or elected officials or appointed officials would say, "Well, that's much worse than

Ad Hoc Information Committee Workshop, September 18, 1998

that." But the market can sort that out. People can say, "I'm much more concerned about salmon than I am about haze in the Grand Canyon." And those are the kind of consumer preferences we would like the market to be able to address. That's what the marketers are for. That's why markets are wonderful.

MR. GILLIS: So if I understand your point, is that Idaho can establish a definition of low-impact hydro and California could establish a definition of low-impact hydro that might be different, but the tracking mechanism should potentially support both. But that does raise an issue of consumer confusion then. That may be outside of the discussion of what's the appropriate regional tracking mechanism, but it's one that seems like it needs to be addressed.

Because if it's being advertised as low-impact hydro in two locations, particularly made by the same firm as a different product, then how do we handle that as a region or do we need to handle that as a region?

MR. CARVER: Phil Carver. I think that would evolve appropriately. We've had those difficulties with organic vegetables and California led the way with an organic vegetable system. We have debates going on in the national system about what's organic and what's not.

But I think eventually it has to be pretty real simple and there only be one. I think it evolves towards that, because if you have a multiplicity of systems, say, designating hydro as

Ad Hoc Information Committee Workshop, September 18, 1998

low impact, then consumers get confused and they don't reach for their wallet and nobody gets any money. That behavior goes away. And the marketers get together and say, "We need to consolidate these conflicting and confusing systems so we have only one designation of low impact. And we need to have a consistent system." So the market tends to sort these things out naturally.

MR. GILLIS: Do we need any system for dispute resolution within the region on those kind of issues or not?

MR. CARVER: I think to this extent that states want to use a particular characteristic, it would be useful for them to communicate that to other states so the other states could go, "Well, I like that" or "I don't like that" or "I'd like it if you would change this one little feature and then we could use the same sort of characteristic on our labels."

The organization we have right now is the Committee on Regional Electric Power Cooperation, which meets twice a year and includes energy offices and state offices and has typically a large industry participation on the agenda. That organization works on a consensus basis in a sort of live-and-let-live basis.

I think that's probably the right structure for people to come and present what they're doing. Other states can say, "Yes, I like that. I want to adopt that," or not.

PRESIDING COMMISSIONER MOORE: I think we'll come to the structure of something to deal with this later on in the

discussion.

Someone's trying to reach us, I think, on the phone, so let me turn to that and see if they are still there.

MS. CARTER: Yes. I'm sorry. I didn't know if you guys could hear me or not. This is Sheryl Carter, NRDC, and I just wanted to make the point that --

PRESIDING COMMISSIONER MOORE: Sheryl Carter, hang on one second. If you can wait for us here, we're going to turn the microphone closer to the box. Try again.

MS. CARTER: Okay. I just wanted to make the point that it was my understanding that what we're talking about here is the tracking system the whole Western region can use as a common base to go ahead and use that information any way they wanted.

I would really hate to see us get into the specific issues of trying to define low-impact hydro, for instance, for the whole region. That would be, I think, way more controversial than we need to get at the moment. And I would hate to see the lowest common denominator then mandated for all of the different states.

On the other hand, I do recognize and we have recognized a whole bunch of different definitions in the region could cause a lot of confusion, a lot of problems in the market. And so I just wanted to mention the national environmental groups have definitely recognized this and we are working on a

Ad Hoc Information Committee Workshop, September 18, 1998

uniform type of system that hopefully we can all agree on or most of us can agree on to help reduce this problem.

PRESIDING COMMISSIONER MOORE: Well, Sheryl, let me just point out that one of the benefits we think we have been talking about is if we attached the lowest common denominator, that is a generation point right at the generator, describing the nature of the generator later on is absolutely open.

At this point if we establish the base, that is the basic information, you generate an electron and we know where it came from, the day it was produced, the hour it was produced, then the characteristics description following that, as Phil was pointing out a little bit earlier, can be done at any point along the line. It can be done by any individual state or it could be done by any individual group in describing what they see. So if we know the point of origin the description can vary with the viewer, I suppose.

MS. CARTER: Right, absolutely. And I agreed with Phil on that point, but I was just trying to respond to your question, your concerns about potential legal liabilities in trying to get all of the different states to agree.

PRESIDING COMMISSIONER MOORE: Yes. And that's a very important point. I want to make sure we deal with the question of how to get the states to agree and the forum in which we do that here before we leave today.

Sheryl, while we're bringing that up, let me just say

Ad Hoc Information Committee Workshop, September 18, 1998

that for anyone who is listening, the Bob Grow handout, the note entitled "The Flow of Kilowatt Hours and Fuel Type Information Under SB 1305," and Phil Carver's handout that he was talking about, "The Denver Tracking Proposal in Incumbent Utilities" are both now online. You can download those as of a few minutes ago under an html format online. So if you want to go to what our capable Staff have been talking about, they are now ready for you to download.

Sheryl, are there other people? You're calling from Houston, are you not?

MS. CARTER: No, I'm not. I'm calling from San Francisco.

PRESIDING COMMISSIONER MOORE: Okay. Thanks.

Let me go then to the question of data sources for just a moment and say: Is there any other way that we can get this beyond -- this is a variant of my question of how far up the tracking line you can get.

Is there any other point at which we can reliably acquire data? Reliably. Can we rely on it? Is there some other point from an ESP or energy service provider or from a scheduling coordinator that it's realistic to acquire the data as well?

MR. CARVER: Well, the possibility exists that the EAI (sic) EPA data would suffice for our needs. They have not finished their rulemaking, they just closed their comments on

Ad Hoc Information Committee Workshop, September 18, 1998

September 8th. But the proposal they had issued on July 17th, and there was another proposal associated with that, that I think would, from my discussions with EPA, meet our needs and would provide a generation database.

Now the other part that is not included --

MR. AUSTIN: Just a clarification. You mean EPA or EIA?

MR. CARVER: Well, EIA has the database. That's right, EIA has the generation database, the total kilowatt hours. EPA is working on a database to make that user friendly and accessible and have other characteristics on it.

But the hard part or the more difficult part are the retail claims, the specific purchases. As the California system has, one, to make sure the sum of them, the retail claims times the kilowatt hours is equal to the amount of specific purchases that are claimed by that retailer, so what the retailer buys and what the retailer sells adds up.

The other part is to make sure all the claims by the retailer of the specific purchases are backed up by something, either an audit attestation or a certificate or something. Then to make sure all those audit attestations or certificates get sent somewhere so somebody can add them up and compare them to the total generation for that plant.

PRESIDING COMMISSIONER MOORE: Well, right now I can account for specific purchases in the state of California

Ad Hoc Information Committee Workshop, September 18, 1998

using the help of the ISO and the Independent Systems Operator and Power Exchange. So I can get help. We can track down and isolate what those specific purchases are.

How would I do that in any other state?

MR. CARVER: I think each state has to set up a system that the retail sellers turn in what in California is called the audit attestation, something equivalent to that.

PRESIDING COMMISSIONER MOORE: And we would need individual state legislation to do that?

MR. CARVER: I don't know. That's a good question that I haven't thought all the way through. It depends on the labeling requirements of the states and the different administration of that.

Maybe Tom has a thought.

MR. AUSTIN: Let me just give it a try. What you would, I believe, need in order to recognize other states, or what the proposal coming out of Denver would have you do at least, is to rely on certificates from out-of-state generators which would say this represents a kilowatt hour from a hydro plant or a wind plant or whatever, and California would have to accept that.

And probably any state involved in this scheme would have to have some criteria controlling the creation and trading of that certificate, much as Bob Grow was discussing earlier. But that's about all you would need. I don't see why you would

Ad Hoc Information Committee Workshop, September 18, 1998

need any legislation in the generating state in order to control the creation of that certificate.

You might need -- if you wanted the neighboring state to have all of their generators create certificates, if you will, perhaps you might need legislation at that point. But to the extent it's a desirable characteristic and somebody wants to create the tag, you don't need a law requiring them to do that.

MR. GILLIS: But to the extent the generator in an individual state is making a claim in multiple states, can that be tracked? Otherwise if the state doesn't have an ability to -- either the generator voluntarily reports those claims to the central clearinghouse or not, do they have to --

MR. AUSTIN: It seems to me the best protection against that is to have all states rely on the same, identical certificate mechanism which would allow them to know that the certificate which is being turned in to support a claim in Idaho, to pick a state at random, that certificate has also been used to support a claim in California.

Now if you're all using the same database, that fact would immediately pop out. If you're using a bunch of different databases, then there's no reason to think you'd find that out except by luck or by some sort of separate fairly complex mechanism.

MR. GILLIS: The question, though, is that without legislation that would compel that or require the individual

Ad Hoc Information Committee Workshop, September 18, 1998

generator to report their claims to this central clearinghouse. What would prevent them from making a claim in a different state that may not require that and double sell it? How do we prevent the double selling?

Let's just pick on Phil's Wyoming again. And the generator, we'll have the generator be in the state of Washington. The generator is selling for a premium with a claim in Wyoming. Wyoming is not necessarily requiring those claims be made to the central clearinghouse.

And then generator also sells to, let's say, California where there's a system set up and California's a part of the regional system. But Washington doesn't have any legislation, Wyoming doesn't have any legislation that would compel that generator to report the claim they made to Wyoming, so how would we know?

MR. CARVER: If I could take this, Tom. Phil Carver. I think it depends on how the PUC in Wyoming responds to the making of that claim. I think if the Wyoming Commission perceived those claims were being made by the Washington generator in both California and Wyoming, then I think they could turn the information over to the clearinghouse and say, "This is a clearinghouse. It's a nonprofit clearinghouse. It's set up to try to keep information correct. And we have information the Washington generator is making this claim in Wyoming."

Ad Hoc Information Committee Workshop, September 18, 1998

They could send a letter to the clearinghouse saying, "We think there are claims being made of the following amounts." Now how they found out about that, if there's no labeling or disclosure requirements in Wyoming, it would be pretty haphazard.

But to the extent a problem is known, then the problem can be communicated to the other states so they could at least know there were two claims being made on this same power. So the system has a certain amount of self-policing activity in that if it's a nonprofit clearinghouse and they're not making defamatory or unsubstantiated statements, then I don't think they're subject to lawsuits if, in fact, somebody's doing something like that.

MR. AUSTIN: Tom Austin. It is a little tricky. And it's hard to be -- I mean the only way you could really be sure, I suppose, is for federal legislation requiring, in our example, Wyoming to participate.

That said, if you look at the situation of a state like Wyoming or almost any of the states in the West but California, they are small states. They are likely to be particularly exposed in a way that California is not to the double counting kinds of problems because of their relatively small size.

So it would seem to me if their interest in making sure reasonable claims are being made to their customers and their customers aren't buying power which is simultaneously being sold

Ad Hoc Information Committee Workshop, September 18, 1998

in one or more of the other Western states, they would want probably to join in to this regional group. And you can see that by the fact that we got practically every state in the region in Denver a month ago. Or, at the very least, if they don't opt into the mechanism, to have some kind of a communication device which helps protect themselves against double counting, it's hard for me to see why it would be in any state's interest to want to be the odd guy out.

The real thing they're doing is inviting fraud, which the folks in their state will be at least one of the injured parties on.

MS. LARSON: This is Robin Larson. Can people hear me?

PRESIDING COMMISSIONER MOORE: Yes, Robin, you're coming through.

MS. LARSON: I would think you could also look at that on the flipside and if Wyoming wants to export wind power or something, then it would be to their advantage to sign on to this sort of uniform information system we're trying to put together and use the same kind of certificates or what-have-you.

MR. GROW: I'd like to respond to Robin and the other commenters. This is Bob Grow. We can prevent double counting just by the way we do our tagging system.

I think if you look at the tagging form we have already created, it doesn't leave a lot of room for double counting,

Ad Hoc Information Committee Workshop, September 18, 1998

especially if we make it a requirement that those generators that want to do tags have to have tags for all the generation that they produce during the period. So it would all be accounted for on the tags. And it might not all be claimed in California.

So let's say a Washington generator is part of our tagging program and they create tags for 40 percent of their generation that's claimed in California. They also have to have 60 percent, the remaining 60 percent at least on tags somewhere that we would know about.

So if that gets claimed in Wyoming or something, fine. If Wyoming wants to verify that we do have documentation for the generation in the form of tags, we can say, yes, we do have it. Yes, it is legitimate.

I'm sure there's a way to beat this system somehow, but I think we can make it pretty tight. And I don't think it would require legislation in other states.

MR. AUSTIN: The part of that that I don't see, a tag is created and used to support a sale in California. That same tag is also used to support a claim in Wyoming where Wyoming has not opted into the mechanism and there's no real way for you and Wyoming to get together and understand the tag has been used in both state is.

MR. GROW: Okay. Now I'm not sure about electronic tags, but if we're talking about paper tags there is only one

Ad Hoc Information Committee Workshop, September 18, 1998

copy of the tag. It has a serial number on it. There are no two tags that represent the same generation. You can't have them in two places at once.

MR. AUSTIN: Unless there is an official California tag which you can create, --

MR. GROW: Yes, we would create it.

MR. AUSTIN: -- and also an official Wyoming tag over which you have no control or knowledge of.

MR. GROW: Yes. But we have to -- we can require that all of the generation from a certain generator be accounted for on California tags. Now that doesn't mean that it all has to be claimed in California, but we can make it a requirement of our program that we have documentation for all of their generation.

So I think the best opportunity for abuse of the system is for a generator to sell some of its output and not transfer a tag along with the power they sell so they end up holding the tag themselves. And then let's say the buyer was from Wyoming. Maybe they didn't even know about the tags. So then they might claim, "Well, we bought from this generator in Washington and it's wind power," or something and that wind-power generator would still have a California tag they could sell to somebody else.

Well, we could prevent that also, I think. Like, for instance, on the California tag we could require it be endorsed

Ad Hoc Information Committee Workshop, September 18, 1998

by a purchaser. Now if the generator wants it back, then they can buy it back or they can get it back for free if the buyer is not interested. But at least we need an endorsement of someone who bought it. In this case it would have to be endorsed by the Wyoming purchaser. So we would know about it. And that Wyoming purchaser would know there was a California tag created and that tag creates a claiming right.

PRESIDING COMMISSIONER MOORE: Well, let me just point out, going back to the electronic tag for a second, if we use the Euro dollar as an example, there's no reason why we can't denominate each one of these certificates in some common currency. Whether it's a California certificate or just a certificate of some kind, we can arrive at a common denominator to create them.

Second, once they get created in some space, wherever that space is, they will be assigned a number. They will be assigned a code for time of use, time of generation. And in a sense, that is the reference datum point. It doesn't have to be paper. It just has to be something that's fixed in some central location that says this is its common currency location. Here's when it got created electronically or in hyperspace and if it gets assigned to someone there's no reason why you can't have an electronic signature assignment as well that creates and then extinguishes on demand.

To me it is much more awkward to imagine moving or

Ad Hoc Information Committee Workshop, September 18, 1998

examining paper in the process. I'm very resistant to that when we've got all the tools we need to make something come into virtual existence, have a time-date stamp on it and be the moral equivalent of paper.

MR. AUSTIN: Let me offer one observation. It seems to me the most critical issue is this: As long as you have the possibility of a California tag being used to support sales in California and maybe some of the other states and some other mechanism being used in some of the states, that you have a large and potential double-counting problem. And you're not going to resolve that, I don't think, by having electronic tags or paper tags or anything else.

You're going to resolve that by having all the states within the region use the same Euro dollar currency. That's the critical piece.

There are two ways you can get to that desirable result. One way you can get to it is by having the federal government tell you you've got to do it, which is not the good solution.

PRESIDING COMMISSIONER MOORE: That's not what Jim Hecker (phonetic) says.

MR. AUSTIN: And if he were here he could put his two-cents worth in.

PRESIDING COMMISSIONER MOORE: I'm teasing. I'm using his name in vain, Jim, if you're listening to this. That

Ad Hoc Information Committee Workshop, September 18, 1998

was a joke.

(Laughter.)

MR. AUSTIN: But the other mechanism you can use is this CREPSI mechanism that we're all peddling toward right now, which is to come up with a scheme which has the voluntary endorsement of all or substantially all of the states in the Western Grid.

And if you can do that, then all of these issues about interstate coordination can be directly addressed, and from everything we've seen so far, directly resolved.

PRESIDING COMMISSIONER MOORE: Tom, let's take that a step further and talk about what that might look like.

What's the lowest common denominator of reporting that we could start out with? When Bob Grow put up on the screen -- and I'll repeat for our listeners on the Web that both of the visual presentations are available for download as we speak. So if you want to see what had been up on the screen -- but Bob had a very simple certificate up there that could be used as a starting place.

What more do you need beyond the number of electrons that were generated by plant of x type, on x date, during y period? And perhaps then if there was a direct sale to a specific purchase, if you will, that's annotated in that as well.

Can we get simpler than that? Are there pieces of what

Ad Hoc Information Committee Workshop, September 18, 1998

I just iterated that could be dropped out or does that not suffice? Is there something else that's convenient?

And, Robin, if you're listening from the ISO, is there a piece the ISO could contribute without cost or without extra effort to this? What's the simplest that we could design for reporting and move from there?

MS. LARSON: Well, I think, Commissioner Moore, what we've done in California is not the simplest thing and I think we're going from complicated to simple in that the lowest common denominator is, in fact, the generating facility.

What we're finding with SB 1305 implementation is the ISO, for example, can provide a certain piece of that information for you. That is, those particular plants that are individually connected to the ISO grid. But that leaves out a whole lot of plants. And we're still going to try and work with you in the shorter term to try and reach that information. But I think the beauty of the certificate system, if it ever gets there regionwide, is that is the lowest common denominator. You get it straight from the plant, and that would be regionwide.

MR. AUSTIN: I think of these systems as involving two fundamental pieces. One fundamental piece is the creation of the certificate and Bob's mechanism to create the certificate, whether it's on paper or in an electronic form, I think works fine.

The second critical piece where we have to have a

Ad Hoc Information Committee Workshop, September 18, 1998

degree of uniformity throughout the region is in the retirement or the use of those certificates. California, for example, has their mechanism as shown on the Excel spreadsheets whereby you match either the certificates you have with the sales you make. And you also need to have that done on some kind of a consistent regional basis. You have to have a mechanism to know that a certificate was used to back up a kilowatt hour sale in California or in one of the other states. That's the other fundamental piece of the least-common denominator solution.

After that you don't need much. You don't need to have agreement on emissions. You don't need to have agreement on whether you're going to characterize hydro as low impact or high impact or big or small. But what you do need is one mechanism to create the certificates and one mechanism to retire them.

PRESIDING COMMISSIONER MOORE: Bill, do you want to add anything to that?

MR. GILLIS: No. Well, I did want a clarification on that.

You say one mechanism to create certificates and one mechanism to retire certificates. They can potentially be the same mechanism, or what do you mean by that?

MR. AUSTIN: Oh, well, they're just conceptually different pieces. What you need to create a certificate is the knowledge that a generator, in fact, generated from plant x. That's when you need to create the certificate.

Ad Hoc Information Committee Workshop, September 18, 1998

When you need to retire the certificate is you need to know that an electricity retailer sold a kilowatt hour to a customer and claimed it was a hydro kilowatt hour and used this tag as support for the claim. That's fine. Now you know that certificate is now in the used pile.

And you have to have a mechanism which follows all of the Western states and knows that happened in California which caused a particular certificate to go in the used pile can go on from there. So there are two conceptually separate pieces.

PRESIDING COMMISSIONER MOORE: Right. And as Phil said earlier, we want to make sure in the end it's like the old X modem protocol, that there's a checksum that allocates each one of them to the appropriate place.

Let me just turn, if I can impose on Jan Pepper for a moment. Jan Pepper is an executive with APX, an Alternative Power Exchange here in California. And they have been up and running. They have gone through the bumps of trying to get things started from ground zero.

If I can lean on you just a little bit to talk about how this is working and your experience with the actual tracking of inputs and claims made from your clients, it could be of great benefit to us.

MS. PEPPER: I'd be happy to do that. Can you hear me okay?

PRESIDING COMMISSIONER MOORE: Yes, I can hear

Ad Hoc Information Committee Workshop, September 18, 1998

you. I hope everyone can hear on the Internet.

MS. PEPPER: We have been running the APX green power market since April 1, when the California market opened. We have restricted that market to only those resources that meet the California Energy Commission's definition of both a registered renewable generator and also eligible for funding through the Renewable Resources Trust Fund. So those marketers who purchase from the market can then apply for the CEC's Customer Credit.

That's been working just fine. We track what the generators generate by getting their meter readings. For a number of them we are their scheduling coordinator, so when we get their meter readings we see what they have actually produced versus what they actually sold into the market, and can reconcile any difference there.

And similarly on the providers' side or the retailers' side, they purchase the power and then again the meter readings for their customers -- well, actually the Energy Commission gathers the information on their customers and how many kilowatt hours they actually delivered, to make that reconciliation.

So for the monthly reports that come into the Commission on the Customer Credit side, the generators or APX as a wholesale provider shows how many kilowatt hours have been sold to that provider and then the provider provides a back-up to the Energy Commission that indeed there were eligible

Ad Hoc Information Committee Workshop, September 18, 1998

customers who bought that power.

So based on that I would support the comments Tom Austin has been making. As far as a tagging system to be successful you need to have everyone buying into that.

Back in December, you probably recall, Commissioner Moore, we were a big proponent of going towards the tagging system. We are really pleased to see a regional approach is starting to emerge on this whole topic.

The reason we didn't implement that with the start of the market is because you do have to have complete buy-in by the region and everyone has to be participating in it for it to work. So I don't know what the appropriate political mechanism is for making that happen, but it seems like you certainly have to have all the generators in the region following the same protocols so you don't have double counting. You've got to be able to get the meter readings from each of those generators.

And I agree with Robin, that that's where the data resides and you can use that to reconcile all this to make sure there haven't been more kilowatt hours generated than have been sold or they have been sold twice.

PRESIDING COMMISSIONER MOORE: Jan, none of this is free, so where are the charges accruing in the system that you run? Where can you legitimately and fairly assess a charge for activity?

MS. LARSON: Well, the way our market works, we

Ad Hoc Information Committee Workshop, September 18, 1998

charge a transaction fee for transactions in our market. If a generator sells into the market and a buyer buys from it, they each get charged a transaction fee. And if we do the scheduling for them through the Independent System Operator, we charge a scheduling fee just like other scheduling coordinators do.

So we aren't charging at this time any additional fee for doing the tracking. Although we have proposed before that we're perfectly capable of putting together a regionalwide tracking system, similar to what we're using now, to do this whole thing.

PRESIDING COMMISSIONER MOORE: Is there a scale argument that gets used on the pricing? I think you have folks who have thought about a regional system. As it scales up and you have more transactions, does it look as though those costs would fall and, if so, how much? Is there an economy of scale?

MS. LARSON: There probably is. I don't know offhand what that might be. We would have to look at that. But I'm sure that as it gets bigger -- it's just computer transactions. And --

PRESIDING COMMISSIONER MOORE: Has there been any resistance in your program to the fact that there is or necessarily needs to be a charge? Are people saying, "Well, I won't participate in the APX program because, frankly, I don't want to have a transaction charge imposed on me"?

MS. LARSON: No. I mean wherever you go to do your

Ad Hoc Information Committee Workshop, September 18, 1998

transaction there's going to be some kind of charge. If you do a bilateral agreement, someone's taking a piece out of that rather than going through our market. At some point you need to get that power scheduled. And we as a scheduling coordinator charge one fee. Other scheduling coordinators charge another fee. So we're really no different than anyone else. I mean that's just kind of the way the market works.

PRESIDING COMMISSIONER MOORE: Let's say that today we had a system where the CEC administered the regional program and maintained the records. And let's say all Western states were participating. We may not even have the actual tracking located here in Sacramento. It could be somewhere else. We have often talked about, well, maybe it could be in a state like Idaho, for instance. You could locate it somewhere else. It physically didn't have to be here.

No matter where it was, do you see any conflict in having someone like the CEC administer that kind of tracking system and running your own market system?

MS. LARSON: No. I think they would complement each other. I mean we have been a proponent of tradable tagging system. Right now our market is an hourly energy trading system and we would like to move to something where you do separate the energy from the attribute, whatever that attribute is, whether it's a green or nuclear, whatever, because that facilitates more trading, we believe.

Ad Hoc Information Committee Workshop, September 18, 1998

And to have the tags be kind of endorsed by the whole region, I think opens it up to more people participating and being able to help the generators and help the marketers get more green power out there.

PRESIDING COMMISSIONER MOORE: Let me just pause here for a commercial, if I can.

We are online on the Internet. If people want to send us something using our chatroom, where the Commissioners will be able to see your comments, if you have questions, let me just provide the email address right now.

It's p-s-o-r-e-s-i, psoresi@energy.state.ca.us. So if there is anyone out there who would like to send us comments via email, please use that address, and it will be forwarded to Commissioner Gillis or myself here on the dias.

Commissioner Gillis, do you have questions for Jan?

MR. GILLIS: No, thank you.

PRESIDING COMMISSIONER MOORE: Jan, --

MS. LARSON: May I say something, Michal?

PRESIDING COMMISSIONER MOORE: Yes, of course.

MS. LARSON: I'm about to sign off to go catch an airplane, but are there any other questions you would like to ask of me before doing so?

PRESIDING COMMISSIONER MOORE: That must be Robin Larson of the ISO.

MS. LARSON: I'm sorry. Yes, Robin Larson of the

ISO.

PRESIDING COMMISSIONER MOORE: No. I just want to point out we're going to try and work with the Independent Systems Operator and the Power Exchange to make sure whatever system we ultimately utilize is just as seamless and as efficient as we can. And that means as condensed, I think, as we can.

So if you have any comments you would like to leave us with about the capacity of the system to support the information flows or to eliminate redundancy, this is probably a time to put them on the record.

MS. LARSON: Well, once again I would just go back to the previous statement that the simpler thing to do is to go to the lowest common denominator which is, in fact, the generating unit.

I think why it will work in a market system as well is because this sort of shortens the audit trails for the retail sellers. This may take a transition point to get there, but I think what we envisioned in Denver was the ability for the retail market participants to weigh the advantages of going to get a certificate that's issued by the generator and not have to do such a complete attestation.

I guess "keep it simple" is the motto here and I think that's where we're headed. I certainly appreciate the openness of the process, and the Energy Commission is willing to work

Ad Hoc Information Committee Workshop, September 18, 1998

with us on that.

PRESIDING COMMISSIONER MOORE: Thank you very much. And have a good flight.

MS. LARSON: Thank you.

PRESIDING COMMISSIONER MOORE: Let's, I guess, go back to formats for a second. Frankly, what I'd like to do is I'd like to roll out to the discussion of how we might implement this, our role of the public utilities commissioners and state legislators and see what we can come up with as a mechanism to actually implement this in the future, if it's going to work that way.

Do we need a standardized format that we offer up? Should we have something like the label that we developed here in California that would be available for other states?

I might turn to my colleague and ask for comments on that.

MR. GILLIS: I'll just report on what was talked about in Denver. The group that was in Denver felt it would be desirable to offer suggestions, models to states recognizing there are some advantages to the extent that we achieve at least as much uniformity as possible across the states in what is the actual disclosure or label that's particularly useful to the companies that are selling across borders of the states and is also useful to the consumers because it helps. Consistency of information is helpful to consumers.

Ad Hoc Information Committee Workshop, September 18, 1998

But the group in Denver recognized there is a diversity of interests in the states and that individual states will likely have specific things they may want to have on their disclosure.

I guess my view on it is that what's really important that we accomplish as a region is this tracking mechanism that is a consistent, cooperative tracking mechanism along the lines we have talked about today. And it would be nice icing on the cake if we had consistent disclosure. I think it would be good to offer it up, yes, under that context.

PRESIDING COMMISSIONER MOORE: Let me just, if I can impose on someone else who is here. Steve Kelly is representing the Independent Energy Producers. It might be valuable to just get a separate viewpoint on what kind of burden we might be placing or what people might visualize as a burden from the standpoint of those independent energy producers.

How much of a cost would they see to comply with this and would it be outweighed by the benefits of having severable characteristics? The energy component versus the characteristic itself, the point of origin? Steve, do you want to join us at the table here and comment on that just a little bit?

MR. KELLY: Thank you, Commissioner. Steven Kelly with the Independent Energy Producers. I apologize for missing the first part of this workshop, but I was detained.

I think, first and foremost, the important thing is to

Ad Hoc Information Committee Workshop, September 18, 1998

ensure we in some sense have the right incentive so people want to do this. And really the market is going to determine the extent to which people will want to follow through claims.

In the absence of having an effective market for green power, for example, people will sell into an undiscriminated market at whatever the clearing price is. And if the cost for setting up the certification or pursuing this gets to the point where it negates the value of a premium market for renewables then I think we lose the value that is there for the public, for the discrimination. So we need to keep that thought.

But having said that then each individual generator or renewable marketer will probably weigh the value of actually pursuing a claim-based program and weigh that against the value that it can get in the marketplace for having done so. The amount of information that is required and the cost for pulling that together is pretty much an unknown now. And I really don't have a good handle on whether it creates such a burden that we lose the goal we're trying to achieve.

I think in California, though, the one thing we have done to date that is very good is to say if you want to make a claim then here are certain steps you have to do to provide us the assurance that the claim is valid. And it seems to be working to the extent of this early market we're developing here.

I'm not sure if that answers your specific question,

but --

PRESIDING COMMISSIONER MOORE: It gets closer to it.

How do you pay for this? In your mind, if this has value where do we assess the charge?

In other words, if we run a regional clearinghouse here at the California Energy Commission and we act as an agent for all the other Western states and an access point, who do we charge for that and how do we fairly assess those costs?

Do we proceed the way Jan has and have what would amount to an additional cost, because it would be an addition to anything they did or an additional to any other transaction cost they were incurring in the market?

MR. KELLY: Well, let me flip that a little bit and point that if you were to impose the cost on the generators or the energy service providers, the retail providers, the cost is going to get passed through in some form or the other. And it's only going to get passed through to the extent that the market can bear that, that the premium you're getting for the kilowatt hour you're delivering overcomes that.

And that's kind of a private market sector allocation of the cost responsibility. If it turns out the costs get too big and that is imploding the market, but we still realize there's a public benefit for this, then there may be is another way to allocate the cost responsibility for developing this kind

of mechanism.

Right now, though, I think the system Jan Pepper talked about is one which is a system in which the costs are borne by the parties to the agreement, basically, in the bilateral market, as it were, and it's passed through. To the extent a generator wants to work with APX as opposed to another power exchange, they will do that based on the cost associated with that exchange.

And as more and more exchanges emerge -- for example, if the Power Exchange in California were to develop a green market, an individual generator will weigh the cost that APX has for doing what they do against the costs the Power Exchange would impose for doing what it does and determine whether it can recover that.

PRESIDING COMMISSIONER MOORE: On the point of view of the Independent Energy Producers do you see a value in this? Can you foresee the premium we have been discussing here?

MR. KELLY: There is certainly a lot of value in having customers comfortable they're getting what they pay for. That is critical to being able to develop and expand the green market. If there are any doubts as to that, I mean if people have uncertainty that they're getting what they pay for, then I think the potential for the market imploding is pretty great. And we want to mitigate that risk.

So in that sense having customers comfortable that the

Ad Hoc Information Committee Workshop, September 18, 1998

product they're getting is what they're paying for or they're getting it in the manner in which they are comfortable, is very important.

PRESIDING COMMISSIONER MOORE: Do you see the primary beneficiary of this to be green power?

MR. KELLY: That is the way I have looked at it, is differentiating a product from the rest of the marketplace. If you're selling your product at the same price as what the rest of the marketplace would bear, for example, and you're not getting a premium, then I don't know that there is a lot of value for making the differentiation from a generator or a customer perspective. There may be for other environmental reasons or other public policy reasons, but from a market perspective.

PRESIDING COMMISSIONER MOORE: So if wind was selling at a penny and a half, no advantage, they're beating everything on a cost basis, not on a characteristics basis?

MR. KELLY: A penny and a half compared to --

PRESIDING COMMISSIONER MOORE: A penny and a half a kilowatt hour.

MR. KELLY: If wind were producing at a penny and a half and the market is clearing at three, then I would assume that --

PRESIDING COMMISSIONER MOORE: No characteristic --

Ad Hoc Information Committee Workshop, September 18, 1998

MR. KELLY: -- you're going to have a bizillion wind turbines because it's the cheapest source.

PRESIDING COMMISSIONER MOORE: Or, conversely, if it was clearing at three and the market is clearing at three in general, then there's no net advantage to the green characteristics. It's just price sensitivity.

MR. KELLY: Well, I will caveat that a little bit. We know from experience to date in California there are particular customers who are interested in buying an environmentally-preferred product like a wind product. And particularly some of them would like to know they are purchasing or facilitating the generation from a wind turbine. And to the extent they could actually point to which particular wind turbine it is, they like that.

So again from a customer perspective, there are some customers that like to be able to make that tracking back to a particular source. To the extent to which all customers want to do that, I don't know. We're still exploring that as we develop the green market in California.

PRESIDING COMMISSIONER MOORE: Okay.

MS. PEPPER: I would like to add into that. This is Jan Pepper with APX.

From our experience we have definitely seen that, the market is interested in seeing such a system put together. So we would support that.

Ad Hoc Information Committee Workshop, September 18, 1998

PRESIDING COMMISSIONER MOORE: Well, the fact you're still in business would suggest --

MS. PEPPER: That's good.

PRESIDING COMMISSIONER MOORE: -- there is some interest in that.

Commissioner Gillis.

MR. GILLIS: Does your firm sell to multiple states or just within California at the moment?

MR. KELLY: I represent a trade association of independent power producers which includes a full range of renewable producers as well as gas cogen. So we are not selling, *per se*.

MR. GILLIS: I see.

PRESIDING COMMISSIONER MOORE: But some of your clients --

MR. GILLIS: Some of your members are and clients, yes.

MR. KELLY: My members for the most part right now are California based and would be very much interested in being able to export that green power to any consumers who are interested in purchasing it.

PRESIDING COMMISSIONER MOORE: Go ahead.

MR. GILLIS: What I was wondering, built on the question we were discussing earlier, from the standpoint of those members that do sell to multiple states, how important do

Ad Hoc Information Committee Workshop, September 18, 1998

you think it would be to them to have consistent definitions across state lines, or does it matter?

MR. KELLY: I think it's very important. I mean, again, it gets to mitigating consumer uncertainty about what it is they are purchasing. The extent to which the consumer who is going to be driving the engine on this in many respects is comfortable with what they're getting is critical. So standardization, for example, is probably very helpful in providing that assurance.

There are a couple of things we are doing in California. One of the things we have pursued is the labeling of green products in order to provide the consumer assurance on that regard. The Green-E Program is in place in California, where we certify certain products if they meet certain standards. That is again another example of how we're trying to move to create the comfort with the consumers, that they know what they're purchasing.

MR. GILLIS: Have you heard from your members any consumer concerns in the emerging market about the very specific issue we're talking about, or do consumers raise the issue of, "Well, is my power being sold twice somewhere else" or is this something that we worry more about on the regulatory side here?

MR. KELLY: We're pretty new to building this market. And there are a limited number of consumers who are now doing it. But I think there is certain interest in mitigating that

Ad Hoc Information Committee Workshop, September 18, 1998

possibility, particularly people who are advocates for particular consumer interests, environmental interests that are kind of leading the charge in developing this market are very much concerned with that. I recognize that concern and we want to mitigate it.

If spokespeople become uncomfortable with the viability and the legitimacy of the market, then that will spread to those people they represent. So we're recognizing those concerns and want to mitigate them.

PRESIDING COMMISSIONER MOORE: Let me turn to one other topic, and we're going to end up breaking for lunch here in seven to eight minutes and we'll see about coming back for some wrap-up discussion, but I want to go to the question of how something like this would actually get created.

One of the things we talked about, at least topically, is the idea of entering a memorandum of understanding among the Western states, circulating something that would be an informal agreement, it literally wouldn't be binding. I'm trying to stop short of getting the federal legislature to create a compact of some kind, but what are anyone's thoughts on the mechanism by which we might take the next step if we can create a thing, if you will, that can be shopped among the various agencies?

Do we start with the PUCs? Do we take and deputize a couple of members of the NERO, that we have been working underneath, and take a slide show on the road and start with the

Ad Hoc Information Committee Workshop, September 18, 1998

PUCs and then have them work through their legislatures? Do we work with legislative committees? Where is the best place to start and who are the signatories to the thing that we create?

MR. GILLIS: If I could add to that a little bit as maybe part of the question and a possible direction too is the individual state utility commissions and state energy offices from the Western region have been meeting. And there is a fair amount of interest and that does seem like a logical place to take initiative.

One of the questions I have really is how formalized it needs to be. Forming a compact doesn't necessarily require an act of Congress. It depends on what the form of the compact is. There a multi-state tax compact that is formed that does activities very similar to what I think this clearinghouse would do, including the possibility of being able to audit between states, hearing auditing information for taxes. That's what they do and they set rules for how to do that between states. There was actually a Supreme Court ruling that that could be done without having Congress act.

So in that sense there's a possibility of establishing formal compacts and the advantage of compacts in a legal sense without necessarily the burden of having Congress approve it. So that kind of formal thing is one possibility.

The other question, though, is can we do it just more informally. The question: Do we need legislation state by

Ad Hoc Information Committee Workshop, September 18, 1998

state. So, to frame it a little more broadly.

PRESIDING COMMISSIONER MOORE: Tom.

MR. AUSTIN: Just one thought.

PRESIDING COMMISSIONER MOORE: This is Tom Austin.

MR. AUSTIN: I'm sorry. Tom Austin. One of the thoughts that is not fully formed, but you might just want to think about a little bit, to the extent this is a state legislative issue it might be worth having some kind of contact with the National Council of State Legislatures who have various programs to get individual state legislators up to speed. And it might be worth spending a little time thinking about whether developing some kind of a program which they could then take on the road to the various state legislatures throughout the West might be helpful.

PRESIDING COMMISSIONER MOORE: Do you see it as a state legislative problem as opposed to PUC --

MR. AUSTIN: Both. It's both. I mean it varies state by state, as I understand it. Whether an individual state has the authority to require a particular disclosure form in the first place. And there may be some states in the West where the PUCs don't currently have such authority, or at least would like to touch base with their legislature about them.

PRESIDING COMMISSIONER MOORE: Well, that may clearly be the case in Canada where the Energy Minister has authority that exceeds that of the public utilities commissions

Ad Hoc Information Committee Workshop, September 18, 1998

in B.C. or in Alberta, and so I think we're going to want to be very sensitive to who we talk to there. It seems to me the initiative is probably best to come from the PUCs, especially in both those places. But the final authority may not be the PUC.

MR. AUSTIN: The PUCs are a very good place to start. It's probably worth a little bit of thought thinking about whether there's a role for bringing state legislatures throughout the West up to speed. There may well be.

PRESIDING COMMISSIONER MOORE: Okay. Other thoughts. I mean I threw out the idea of an MOU.

MS. CARTER: Commissioner Moore?

PRESIDING COMMISSIONER MOORE: Yes.

MS. CARTER: This is Sheryl Carter. I think those are all very good suggestions and some kind of combination of them that may work, but I also want to caution that we want to make sure we bring other stakeholders into this process as well.

There are folks specifically in the different states that have been working on this very issue. And if this gets done kind of outside of those processes it might just create unnecessary problems and conflict.

PRESIDING COMMISSIONER MOORE: A very good point. I want to reiterate to those who are listening here there is no intention of cutting out any of the stakeholders from industrial players to environmental groups or other interested parties. In fact, that's the reason Commissioner Gillis and I are starting

Ad Hoc Information Committee Workshop, September 18, 1998

at this level, with this kind of a wide spread broadcast to try and interest as many and as broad a spectrum of people as we can in this.

Bob Grow of our Staff wanted to comment.

MR. GROW: Well, I would like to say we do have an SB 1305 program. We will begin implementing it in about two weeks. We may need to work out something down the road that involves various other states and provinces, but we need something immediately. If we don't have certificates we are going to have settlements based, whatever that is. It's going to be what I would call virtual tagging.

I don't think we need to have a comprehensive systemwide or mandatory certificate system. I think we can begin now. We can do it on our own. We don't need an act of Congress or the Legislature. We can just do it.

Perhaps it will need perfection. It may need to be improved upon as we proceed, but I don't see why some lack of perfection need inhibit going ahead, if we have something that's workable.

And it isn't clear to me why a certificate system must be regionwide to work. And it isn't clear why it needs to be mandatory, so maybe I just need some education there.

PRESIDING COMMISSIONER MOORE: Well, I think one of the reasons, of course, is political. It gains currency by being regionwide. And as the different states have been finding

Ad Hoc Information Committee Workshop, September 18, 1998

out, the more we can cooperate the more we can understand the nature of imports and accountability for things that cross our borders.

Clearly one of the big deficits we have and the reason we're having this discussion is the California system is deficient today because we can't account for imports, can't account for the veracity of claims made outside the state boundaries. And it's what started us on part of this odyssey.

MR. GILLIS: The more we talk about this the more optimistic I am becoming that it isn't going to be as difficult as at least I thought it was going to be originally to get the majority of states to buy in, because there just seems to be a tremendous amount of self-interest on the part of the major players to make this happen.

PRESIDING COMMISSIONER MOORE: I think that's becoming clearer and clearer.

And on that note I'm going to declare we're going to take a lunch break. It's one o'clock California time; and we will be back here in an hour and 15 minutes. For those in the audience who care to join us, we'll be going to a lunch break here in just minutes. Thank you very much.

MS. CARTER: Commissioner Moore?

PRESIDING COMMISSIONER MOORE: Yes.

MS. CARTER: Before you take off, I'm not going to be able to rejoin you, so how do I find out what the next steps you

Ad Hoc Information Committee Workshop, September 18, 1998

guys come up with are?

PRESIDING COMMISSIONER MOORE: Well, that's a very good point.

For those of you who will not be able to rejoin us after we come back, we'll publish the results of this forum on our Webpage at the Market Info point on the Webpage. And it will become a reference point for all the members of this effort from the other Western states. So we will use this as a forum in which to continue this dialogue.

All of these materials will be published and available for download on that page. And we will continue the dialogue not only after today but in the future from that point.

MS. CARTER: Thank you.

PRESIDING COMMISSIONER MOORE: Thank you very much. We're in adjournment.

(Whereupon, the workshop, having not resumed after lunch, was concluded at the beginning of the lunch recess, 12:57 o'clock p.m.)

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Ad Hoc Information Committee Workshop, September 18, 1998

Ad Hoc Information Committee Workshop, September 18, 1998

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I, **GEORGE PALMER**, a duly-commissioned Electronic Reporter of **Palmer Reporting Services**, do hereby declare and certify under penalty of perjury that I have recorded the foregoing California **Ad Hoc Information Committee Workshop**, which was held and taken at the **STATE of CALIFORNIA ENERGY COMMISSION**, in Sacramento, California on the **18th day of September 1998**.

I also declare and certify under penalty of perjury that I have caused the aforementioned workshop to be transcribed by myself and by Susan Palmer, a Certified Electronic Transcriber, Number 000124, by the American Association of Electronic Reporters and Transcribers; and proofed Nancy Palmer, a Certified Electronic Transcriber, Number 000121; and that the foregoing pages constitute a true and accurate transcription of the aforementioned workshop.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in the outcome of said workshop.

Dated this **29th day of September 1998** at Manteca, California.

GEORGE PALMER

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